Massachusetts Administrative Council on Toxics Use Reduction

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Fiscal Year 1997 Annual Report

December 1997

Massachusetts Administrative Council on Toxics Use Reduction

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December, 1997

Dear Reader,

The Massachusetts Administrative Council on Toxics Use Reduction is again pleased to present its annual report to the legislature in accordance with Section 4(d) of MGL 21I, the Toxics Use Reduction Act (TURA) of 1989.

Massachusetts industries have continued their great success in reducing unnecessary toxics use and waste generation. As this report shows - TURA is still "cutting edge". The Program Evaluation documents that TURA has been a sound economic investment for its fee paying industries and the commonwealth and results in tremendous environmental and health benefits to our communities and our workers.

The Council offers its thanks to the members of the Toxics Use Reduction Advisory Board and the Science Advisory Board for their continued dedication to making this program the most effective pollution prevention initiative in the nation. We are, as always, grateful for the work of all our staff at the Office of Technical Assistance, the Toxics Use Reduction Institute, the Department of Environmental Protection and the Executive Office of Environmental Affairs. They have shown us what can be done when your mission is sound, your expertise is high and your energy is focused.

Cordially,

TRUDY COXE

Trudy Coxe

RECYCLED PAPER

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ANNUAL REPORT OF THE ADMINISTRATIVE COUNCIL ON TOXICS USE REDUCTION FISCAL YEAR 1997

This is the Fiscal Year (FY) 1997 Annual Report of the Administrative Council on Toxics Use Reduction (Council), prepared in accordance with the requirements of the 1989 Toxics Use Reduction Act (TURA). In this report, the Council summarizes the accomplishments of the Toxics Use Reduction (TUR) program and its five entities: the Council, the Advisory Board on Toxics Use Reduction (Board), the Office of Technical Assistance (OTA), the Toxics Use Reduction Institute (TURI) and the Department of Environmental Protection's (DEP's) TURA/Pollution Prevention Office. Also presented is the first program-wide strategic plan for the TURA program which coordinates the workplan of the five entities in fiscal year 1998, as well as a budget breakdown of TURA fees collected and expended. Information presented in this report supplements that found in the Council's prior Annual Reports, published in 1994, 1995 and 1996.

EXECUTIVE SUMMARY

After long negotiations between industry and environmental activists, the Massachusetts legislature unanimously passed the Toxics Use Reduction Act (TURA) of 1989, making Massachusetts the first state in the nation to legislate pollution prevention. TURA was not a weak compromise, it was a strong consensus that defined a new model of industry/government collaboration to achieve six goals: the reduction of toxic byproduct generation in Massachusetts by half by the year 1997 from a baseline of 1987, the establishment of toxics use reduction as the preferred method of achieving environmental compliance, the promotion of the competitive advantage of Massachusetts businesses, the reduction of toxic substances use within the commonwealth, the strengthening of environmental enforcement and the promotion of coordination between state agencies that administer toxics-related programs. To achieve these goals, the Act did not require Massachusetts facilities to reduce toxics use or to meet specific waste reduction goals. Rather, the Act required that facilities report on their use of toxics and their generation of toxic byproducts and go through a bi-annual planning process designed to identify and evaluate cost-effective opportunities for toxics use reductions (TUR), such as input substitution, product reformulation, production unit redesign or modification, production unit modernization, improved operation and maintenance of production unit equipment and methods, and recycling, reuse or the extended use of toxics. The Act established a new field of private sector environmental professionals called Toxics Use Reduction Planners and provided for the collection of industry fees ($4.5-5 million) from large quantity toxics users (500- 600 filers each year) to support the provision of technical assistance, education, training, research and technology transfer services through OTA and TURI, as well as multi media compliance and enforcement through DEP.

TURA FISCAL YEAR 1997 ACCOMPLISHMENTS

Fiscal Year 1997 was a benchmark year for the TURA Program. It marked the beginning of the eighth year of the TUR program in Massachusetts and the sixth year of industry reporting under TURA. Key accomplishments included the most in-depth and comprehensive analysis and public release of TURA data in the history of the program, the completion of an extensive program evaluation including a cost-benefit analysis and the start-up of intense stakeholder discussions to determine the future growth of the Toxics Use Reduction program in Massachusetts.

CALENDAR YEAR 1995 TURA DATA RELEASE - THE DOWNWARD TREND IN TOXICS USE AND WASTE CONTINUES

- Massachusetts industries have achieved a 30% reduction in their generation of toxics byproducts from 1990 to 1995 (data normalized for productivity) -
  That's 21.1 million pounds of toxic waste eliminated!
- Massachusetts industries have reduced their toxic chemical use by 20 % from 1990 to 1995 (data normalized for productivity) -
  That's 71.7 million pounds of toxics use eliminated!
- In calendar year 1995 alone, Massachusetts industries reduced their byproducts by 5% and their use by 3%.
- Massachusetts industries have reduced their total EPA reportable releases from 1988 to 1995 by 71% - that's more than 25 percentage points above the national average.
- From 1994 to 1995 alone, Massachusetts EPA reportable wastes decreases by 14 million pounds or 14%, while similar (non-TURA) states like Connecticut increased its generation by 1.9 million or 2.2%.
- Since 1991, the first year in which waste data was reported to EPA, waste generation has increased by 7% nationally, compared to 14% decrease in Massachusetts in 1994 alone!!!

THE TURA PROGRAM EVALUATION - DOCUMENTATION OF TURA SUCCESS

Spearheaded by the Toxics Use Reduction Institute, the program undertook an extensive evaluation conducted by independent contractors. The report included an analysis of six years of toxic chemical use data collected from Massachusetts firms reporting to TURA and an assessment of the TURA agencies work under the Act and presents three significant studies:

- a survey of 645 participating TURA firms with responses from 434,
- an in-depth investigation of TUR at 25 Massachusetts manufacturers, and
- a benefit-cost analysis of the TURA program.

Below are some of the findings of the evaluation.

Firms participating in the TURA program have changed their practices and processes since 1990 (the first year of TURA reporting) to reduce their dependence on toxic chemicals. Of the firms surveyed:

- 89% now track quantities of wastes generated compared to 49% before 1990;
- 90% now track quantities of chemicals used, compared to 48% before 1990; and
- 73% now set goals for waste reduction, compared to 24% before 1990.

Of the facilities that said they have or will implement at least a few of the projects identified in their TUR plans:

- 61% said they decreased their byproduct (process waste) generation since 1990; and
- 67% said they have reduced their toxics use during the same period.

Of the firms that said they have not implemented any of their identified TUR projects:

- 61% said that byproduct generation increased or remained unchanged since 1990; and
- 61% reported that toxics use increased or remained unchanged during the same period.

The benefit-cost analysis of the TURA program identified from surveyed firms:

- $91 million total monetized benefits without consideration of the value associated with the human health and ecological benefits of decreased toxics use and waste, and without consideration of the benefits to non-TURA firms; and
- $77 million total cost of implementation.
- That's $14 million in direct savings to industry and unquantified benefits to the Massachusetts environment and the health and safety of its workers and citizenry.

1987 TURA Baseline Results:

In an effort coordinated by DEP, information was sought to evaluate progress towards the TURA goal of 50% byproduct reduction between 1987 and 1997. Since 1990 was the first year in which TURA data was reported, a survey was conducted to obtain this pre-TURA data. However, because none of the largest chemical users and waste generators would, or could, produce figures from these pre-TURA years, the survey was incomplete, documenting only 3% reduction in the waste generated between 1987 and 1990.

"TURA - THE NEXT GENERATION"

TURA began in 1989 as a cutting edge statute and continues to push the P2 envelope today. In an effort to help define directions for the future growth of the TURA program, the Toxics Use Reduction Advisory Board has taken a look at TURA's past success and has begun to formulate recommendations for prioritizing and targeting TURA program resources. The interim report identified three key features of the "Next Generation" of TURA:

- The expansion of TURA's focus beyond reductions in toxics use and hazardous waste generation, to promote reductions in water and energy use, solid waste, and other environmental and public health impact areas where economic savings can be found;

- The expansion of TURA to service additional universes where opportunities to reduce environmental impacts and to increase economic competitiveness can be found, such as small companies, hospitals, universities, state agencies, and municipalities; and

- The resolution of shortcomings in existing TURA services that have been raised by TUR Planners and industry, including paperwork streamlining, the provision of rewards for TUR success (fee reductions), and increased integration of P2 into compliance and enforcement efforts.

In addition, a pilot project was initiated by DEP in FY 97 which could significantly change the way industry reports under all toxics-related regulations, making reporting easier, making the data reporting exercise more meaningful to industries and regulators, and making the data more understandable to and useful to the public.

In sum, Massachusetts continues to make significant environmental progress since the enactment of the TURA statute. From 1990 to 1995, toxics use in Massachusetts has decreased by 20% and waste generation has decreased by 30%. The TURA Program Evaluation, completed in fiscal year 1996, confirmed that TUR saved Massachusetts companies $14 million over and above all costs associated with the program and its implementation. TURA has been a sound economic investment for its fee paying industries and the commonwealth, even without any consideration of the benefits it affords to smaller businesses and the tremendous environmental benefits to our communities and our workers that result from reductions in the use of toxics and the generation of toxic waste.

TURA continues to be nationally and internationally recognized as a successful approach to promote environmental protection and economic progress through cleaner, more efficient production. However, TURA is not resting on its past success. Under the direction of the TUR Advisory Board, the TURA program is taking steps to streamline paperwork, to reward companies who have shown great TUR success, to target its resources and to expand its horizons.

TURA FISCAL YEAR 1997 SERVICES - OTA, TURI AND DEP

The services provided by OTA, TURI and DEP in FY 97 are detailed in this report. Here are some highlights.

OTA:

- OTA technical assistance staff visited 343 facilities, including 78 first-time visits. The push to evaluate both OTA's services and TUR projects continued, with 98 follow-up visits, many of which resulted in requests for additional assistance.
- OTA increased the number of staff supporting the Strategic Envirotechnology Partnership (STEP) , and a research project suggested by OTA (*Mechanical Performance Evaluation of Polyurethane Based Composites for Reduced Isocyanate Demand*) was selected by NETI for funding in FY 1998.
- OTA staff was involved in assistance provided by STEP to the MWRA in designing and implementing a bench scale testing program for technologies that remove mercury from wastewater. OTA will be involved in pilot testing the most promising of these technologies at selected Boston area hospitals during FY 98.
- OTA was the lead sponsor of a conference that highlighted the connections between TUR planning and preparation for certification under ISO 9000 and ISO 14001. Presenters included industry representatives who had successfully used the work done for TURA planning in developing their ISO certification programs.
- In February 1997, OTA sponsored a conference on hazardous air pollutants that featured presentations by the major chemical manufacturers from around the nation. Information on new developments in the search for alternatives to HAPs was presented, as well as technical considerations involved in assessing alternatives.
- OTA staff continued to be very active in outreach about TUR and OTA's services, sponsoring or co-sponsoring 20 events on topics including TUR opportunities for municipalities, the connection between TURA planning and quality programs, and Form S assistance for TURA filers. In addition, OTA staff members gave more than 60 guest presentations at other events.
- OTA continued to participate in policy discussions at all levels of government. Two OTA staff remain active members on national Common Sense Initiative committees for the printing and electronics sectors, and OTA staff worked closely with the Department of Environmental Protection in development and implementation of the Environmental Results Program and other policy issues.

- OTA staff was actively involved in the Massachusetts Watershed Initiative, serving on all interagency basin teams, assuming the leadership of one basin team, and participating in policy discussions about the direction of the Initiative.

TURI:

- The presentation of two classes of the Toxics Use Reduction Planners training courses.
- The expansion of the community education program to fund seven non-governmental groups and five municipal agencies.
- The completion of the fifth round of Research Fellows projects and the commencement of the three new projects.
- The continued expansion of the services of the Technology Transfer Center, including two electronic web sites.
- The merging of the demonstration sites program and the research matching grants program providing support for five Massachusetts companies.
- The convening of the "Mr. Clean" Conference on alternative surface cleaning technologies.
- The completion of 27 projects carried out in the Surface Cleaning Laboratory.
- The completion of the Toxics Use Reduction Program Evaluation.
- The sponsoring of the Second Toxics Use Reduction Planner Continuing Education Conference.
- The continuation of the summer "inTURnship" program with the University of Massachusetts students and Massachusetts industry.
- The development and piloting of pollution prevention training programs for state regulatory staff.

DEP:

- DEP initiated the Environmental Results Program (ERP) with several industry sectors and groups and developed guidance assistance and outreach programs for dry cleaners and photoprocessors, which included a strong emphasis on pollution prevention and innovative technologies.

- The 1995 TURA data was released in January 1997, including 1995 highlights, core facility trends, and projected use and byproduct 1995-2000.

- The 1996 TURA Reporting Package was written in an innovative, user-friendly manner, and was distributed in April 1997.

- The final TURA user segment regulations, as required under Section 3(G) of the TURA statute, were promulgated in April 1997.

- The "1987 TURA Baseline Report" was completed in March 1997, for the purpose of measuring progress in waste reduction from 1987 to 1997, as required under the TURA statute.

- Recertification fees for TUR Planners' second recertification were decreased by 50% in February 1997.

- A procedures manual, "TURA Filer Information and Trade Secret Information Management Procedures" was completed and distributed in March 1997.

- DEP conducted approximately 1,000 multi-media inspections throughout the year.

- DEP conducted on-site inspections at 110 TURA reporting facilities throughout the year.

- Over 500 Toxics Use Reduction Planners have been certified or recertified since the start of the program.

- DEP developed and delivered EPA's Environmental Technologies Initiative (ETI) Training curriculum within its Bureau of Waste Prevention. The focus of the training is pollution prevention integration into DEP activities.

- Over 100 TURA information management system improvements were implemented throughout the year, and a data team was formed between TURA agencies.

FISCAL YEAR 1998 TURA PROGRAM PLAN

TURA's Mission - Still on Target:

The Toxics Use Reduction Act (TURA) of 1989 was designed to foster the development and implementation of environmental protection strategies that are sustainable, i.e. they encourage and institutionalize changes in behavior - whether corporate or consumer - that are beneficial economically as well as environmentally. These strategies, if successful, would allow the Commonwealth to achieve compliance beyond regulatory standards, to grow smarter, to improve our economic base by developing more competitive businesses and cleaner workplaces, and to begin to reduce the need for, and the resources dedicated to, traditional (command and control) compliance and enforcement.

TURA's Success - Plans for Positive Change:

The TURA Program Evaluation, completed in FY 97 under the leadership of the Toxics Use Reduction Institute (TURI), confirmed TURA's success. Not only did TURA industries reduce their use of toxics and generation of toxic waste while increasing production, they saved more money as a result of their pollution prevention (P2) efforts than they expended on all TURA-related implementation.

However, TURA's success as a model to achieve sustainable environmental protection and economic growth is no reason to dismiss calls for program change, particularly those spoken by TURA companies and TUR Planners during the last legislative session. In fact, TURA's success is the very reason it must change. TURA confirmed the existence of shared environmental and economic interests where industry, government and the public can work together to everyone's mutual benefit. The challenge for the TURA program in FY 98 is to identify ways in which we can build on this success by fostering new collaboration and creativity in this area of shared interest. We must learn from our successes and our limitations, consider the many other efforts underway in the arena of sustainability and environmental management, and design another generation of TURA under the leadership of the Administrative Council and with the help of the Advisory Board. If TURA does not change, it will become, over time, one of the traditional environmental compliance and enforcement tools that it was intended to challenge.

Focus Areas of the First Program-Wide Plan:

The FY 98 Plan included in this Annual Report, is the TURA program's first attempt to develop a plan that integrates the activities of all TURA entities. It reflects efforts to continuously improve the program by streamlining paperwork, by rewarding TUR success, and by increasing the integration of P2 into compliance and enforcement efforts. The Plan also incorporates new ideas and strategies designed to test potential areas for the future program growth of the TURA program as suggested by the TUR Advisory Board's interim report entitled "TURA - The Next Generation".

FY 98 PLAN HIGHLIGHTS

The following lists some of the major initiatives starting up in FY 98. For more detailed discussion of each initiative, refer to the bolded sections in the Program Plan.

- A modified TUR Planning Process
- Projects to encourage expanded planning efforts
- Case review process to reward TUR success
- Electronic Filing of TURA Data
- TURA List prioitization by the Science Advisory Board
- Sector analysis of TURA data to help target resources
- Directory of clean products and technologies in the surface cleaning and electronics sectors
- Facility TURA Reports
- Locally based reporting
- Outreach to CEO's and the finance commuity
- Efforts to maximize identification and transfer of cleaner technologies and products, including state purchasing of environmentally preferred products
- Development of supply chain management activities
- Promoting "captured" technologies; i.e. P2 technologies developed by companies for in-house use that may have broader commercial application.
- One-Day Conference on DfE and P2 technologies and products
- TUR Planner disciplinary procedures
- Receipt of CEU credits for P2 work with communities and non-profit associations
- Sustainable Communities Project
- TURA Enforcement Guidance
- Plans for implementation of TURA initiatives in wastewater and solid waste programs
- Start-up of environmental management systems within state agencies
- Planning for a P2 Conference for the medical community in October 1998.
- Training programs for nonreporting and nonindustrial sources
- One Plan - integrated contingency planning

THE ADMINISTRATIVE COUNCIL ON TOXICS USE REDUCTION

Fiscal Year 1997 Accomplishments

The Toxics Use Reduction Act (TURA) established the Adminstrative Council on Toxics Use Reduction as the coordinating body of the TUR program. In fiscal year 1997, the Council, chaired by Secretary Coxe, met bi-monthly to publicly discuss program activities, to establish program policy, and to make determinations on the list of substances regulated under TURA. Highlights of the Council's fiscal year 1997 accomplishments are summarized below.

Program Evaluation

The Council focused much of its attention on the completion of the TURA program-wide evaluation, an effort spearheaded by TURI. In sum, the report showed that industry was implenting TUR options; TUR was paying off in terms of reduced waste and use, as well as cost savings; TURA helped motivate companies to look at their production processes for TUR opportunities; planning was a useful tool; and TURA resources, particularly TUR Planner training and OTA site visits, helped make it all happen.

Highlights of the TURA Program Evaluation:

- MASSACHUSETTS FIRMS ARE MAKING A SIGNIFICANT EFFORT TO IMPLEMENT TURA (PASSED IN 1989):

- Only 30% of the TURA firms were reviewing changes in their production processes for environmental, health and safety impacts in 1990, while 76% report doing so today.
- 89% now track quantities of wastes generated compared to 49% before 1990.
- 90 % now track quantities of chemicals used, compared to 48% before 1990.
- 73% now set goals for waste reduction, compared to 24% before 1990.
- 81% of firms are implementing at least a few projects identified in their TUR Plans.

- THERE IS A CLEAR CONNECTION BETWEEN TUR IMPLEMENTATION AND REDUCTIONS IN BYPRODUCT AND CHEMICAL USE:

- 61% of firms implementing TUR say they have decreased their byproduct generation since 1990.
- 67% of firms implementing TUR report reductions in toxic chemical use since 1990.
- 61% of the firms NOT implementing TUR report an increase or no change in byproduct generation.
- 66% of the firms NOT implementing TUR report toxics use increasing or remaining unchanged.

- SIGNIFICANT TUR PROGRESS HAS BEEN MADE:

  - Between 1990 and 1995 byproduct down by 30% and use down by 20%.
  - 55% of facilities decreased byproduct generation and 60% decreased use of toxics per unit of product.

- THE VALUE OF THE TURA PROGRAM ELEMENTS AND RESOURCES:

  - Most frequently reported benefits were cost savings (67%) and worker health and safety (66%). - 70% indicated that they identified TUR opportunities as a result of their 1994 plan.
  - TUR Planner training and OTA site visits were regarded as the most useful TURA resources.

- THE COSTS AND BENEFITS OF TURA:

  - Based solely on the monetized costs and benefits as reported by TURA firms, the benefits ($91 million) far exceeded the costs ($77 million). Take note that this analysis was very conservative. It did not attempt to monetize the value associated with human health and ecological benefits that result from decreased byproduct and chemical use.

- TURA PROGRAM PROGRESS TOWARDS SIX GOALS:

  - Goal to reduce byproduct by 50% through TUR between 1987 and 1997: DEP's attempt to estimate reductions from 1987 to 1990 (pre-TURA years) was inconclusive. The TURA data show a 30% reduction from 1990 to 1995 - an average of 6% per year.
  - Goal to establish TUR as preferred means of compliance: Multimedia inspections at DEP were seen as a notable accomplishment, but shortcoming were identified in getting all agencies to think about TUR first.
  - Goal to promote competitive advantage:
    60% reported direct cost savings from TUR
    66% reported worker health and safety improvements
    38% saw improvement in firm's environmental image
    27% say that TUR created a market advantage
    45% reduced regulatory compliance requirements
    Concern for product quality main factor in decisions not to implement TUR.
  - Goal to reduce use: from 1990 to 1995 use reduced by 20%: 60% of facilities decreased use per unit of product since 1990. Survey documents the significant impact of planning and other program resources in motivating or assisting firms to implement TUR.
  - Goal to enhance enforcement of existing environmental laws: Multimedia has increased effectiveness of DEP's compliance and enforcement. OTA has worked with many other agencies to strengthen their effectiveness.

- Goal to promote coordination between state toxics-related programs: Documented many joint efforts with other state entities.

The report also documents responses to an open ended question seeking recommendations for TURA Program improvements. 12% want the program eliminated; 14% want it to remain unchanged; 19% want paperwork reduced and 16% want changes to TUR list of chemicals. Other responses run the gamut and are listed.

Targeting TUR Program Resources

As part of the Council's efforts to keep the list of TURA regulated substances on target, the Council reviewed recommendations from TURI relative to chemical delistings. The following decisions were made:

- Hydroquinone, with the exception of it manufacture, was delisted.
- Butyl Benzl Phthalate (BBP) was kept on the list pending the results of additional research on its potential estrogenic characteristics.
- Acetic acid at concentrations less than or equal to 12% was delisted.
- Ethyl Acetate was kept on the list.
- Radionuclides were delisted for calendar year 1996 reporting.
- Petitions to delist acetone and sodium hypochlorite were under consideration with action expected in early FY 98.

Regulatory Changes were made to keep the TURA List consistent with CERCLA and EPCRA.

The Council also supported TURI's efforts begun in FY 97 to provide contract assistance to the Science Advisory Board to develop a protocol for segmenting the list of substances on the TUR List. Contract support is being provided by Tellus Institute. Tellus is also assisting the on-going efforts of the TUR Advisory Board explained below, which focus on directions for the future growth of TURA. Tellus began and is due to complete in FY 98, a small study to assist the Board in targeting industry sector efforts to maximize both environmental and economic impacts.

TURA fee waiver requests were processed for Secretary Coxe's review and determination.

The Council continued to oversee efforts to promote the development and use of new environmental technologies through the Massachusetts' Strategic Envirotechnology Partnership (STEP) to increase the competitiveness of Massachusetts' businesses.

The Council continued its efforts to assist in the development of a process for state purchasing of environmentally preferred products, to move beyond recycled products and encourage purchase of non-toxic products.

Improving TURA Data and the Annual Data Release

The calendar year 1995 data release marked the sixth year in which facilities in Massachusetts have filed toxics use reduction reports as required under TURA. It also marked the first year that DEP created a "Data Release Team", comprised of representatives from TURA program agencies, business and environmental advocacy organizations. The efforts of the DEP-led Data Release Team were substantial, resulting in the most comprehensive analysis and public release of TURA data to date. Chemical use has gone down by 20% since 1990 and byproducts have been reduced by 30% in the same period. Massachusetts industry is truly increasing process efficiency.

THE TOXICS USE REDUCTION ADVISORY BOARD

Fiscal Year 1997 Accomplishments

Section 5 of TURA created the Toxics Use Reduction (TUR) Advisory Board, a diverse group of stakeholders consisting of 15 individuals, including one representative each from the Attorney General's Office and the Massachusetts Water Resources Board, as well as 13 public members appointed by the Governor from large and small business, labor, environmental organizations, and public health advocacy groups. The main responsibilities of the Board are to advise the TUR Administrative Council on all matters relating to toxics use reduction and on program implementation, to provide a forum for discussion and deliberation on matters pertaining to TURA, and to establish an annual Governor's toxics use reduction award program.

Within this charter, the Advisory Board focused its full attention from October 1996 to the end of Fiscal 1997 and beyond, to fully examine the Toxics Use Reduction program - its mission, its mandates and its services - and to identify directions for the future growth of the TUR program in Massachusetts. The outcome of these deliberation thus far is captured in a report prepared by the TUR Advisory Board which is entitled *"TURA - The Next Generation"*. A copy of the full report can be found in the appendix.

The Toxics Use Reduction Advisory Board believes that the unique partnership which TURA created between industry, government, academia and the public, has been of significant value to the Commonwealth. For that reason, the Board sought to develop a course for the future growth of the program to build upon that success and to strengthen that partnership. *"TURA - The Next Generation"* summarizes the discussion of the Advisory Board thus far. Some of the key features already identified by the Board in its plan to prioritize and target future TURA program resources include:

- The expansion of TURA's focus beyond reductions in toxics use and hazardous waste generation, to promote reductions in water and energy use, solid waste, and other environmental and public health impact areas where economic saving can be found;

- The expansion of TURA to service additional universes where opportunities to reduce environmental impacts and to increase economic competitiveness can be found, such as small companies, hospitals, universities, state agencies, and municipalities; and

- The resolution of shortcomings in existing TURA services that have been raised by TUR Planners and industry, including paperwork streamlining, the provision of rewards for TUR success (fee reductions), and increased integration of P2 into compliance and enforcement efforts.

The Advisory Board is continuing to deliberate directions for the future growth of TURA and expects to complete a final report in the next fiscal year.

OFFICE OF TECHNICAL ASSISTANCE FOR TOXICS USE REDUCTION (OTA)

Fiscal Year 1997 Accomplishments

In Fiscal Year 1997, the Office of Technical Assistance continued work on its core mission to provide technical assistance to companies and institutions that use toxic materials, helping them find ways to achieve toxics use reduction. Through on-site assistance, outreach programs such as workshops and conferences, collaborative projects with other groups and agencies, and its work to support the development of environmental technologies, the OTA staff worked to educate Massachusetts manufacturers and the public about the environmental and economic benefits of toxics use reduction, and encourage the implementation of TUR strategies wherever possible.

Following are the highlights of OTA's accomplishment during the past fiscal year.

Technical Assistance and Program Evaluation

In FY 97, OTA technical staff continued to carry out the Office's core mission of providing nonregulatory technical assistance to companies and institutions that use toxic materials. As part of the focused effort to measure the effectiveness of both OTA's technical assistance and the TURA program, significant time and effort were spent gathering information through follow up visits at companies with whom OTA had previously worked. An unexpectedly large number of the follow up visits resulted in requests for additional assistance as well, making these visits more time consuming and labor intensive than anticipated.

Highlights of Technical Assistance Site Visits in FY 1997

- Total site visits: 343
  This brings OTA's total number of site visits since the program began to more than 1,700.

- First-time visits to facilities requesting assistance: 78
  Of these, 46% were referrals from regulatory agencies (DEP, EPA or POTWs), and 77% were non-TURA filer companies. This is the largest percentage of non-filers we have visited in a single year.

- Follow up visits to gather information: 98

OTA staff were able to collect data from 48 (49%) of these follow up visits. The 35 non-filers reported savings of $404,000 and 78% reported decreased toxic chemical usage; the

13 TURA filers reported savings of $610,000 and 73% reported decrease usage that could be attributed to TUR projects. Although the data was collected in FY '97, the reported savings were the result of previously-completed projects.

In addition, OTA staff provided technical expertise and input on several collaborative efforts with DEP and TURI, including:

- analysis, evaluation and presentation of the 1995 TURA data
- preparation of TURI's Program Evaluation Report
- continuing efforts on interpretation and analysis of the TURA data and how it reflects the program's effectiveness
- annual Compliance Assistance Workshops for TURA filers in the spring prior to the Form S reporting deadline

OTA staff also completed a project that identified chemicals believed to be endocrine disruptors and then used the TURA data to determine in which industries they are commonly used. With the results, information was compiled that provides a list of these chemicals, their common industrial use and known alternatives. The list was distributed to technical staff for use in their field work.

Supporting Innovative Technologies

OTA devotes two full-time staff positions to supporting and exploring opportunities for the development of new environmental technologies for use by Massachusetts industries. Highlights of the work that occurred in FY '97:

- OTA continued in its role of administering grants awarded to Massachusetts industries under the federal Department of Energy's National Industrial Competitiveness through Energy, Environment and Economics (NICE^3) program. The two companies receiving awards in FY96-- Brittany Dyeing and Printing Corp. of New Bedford and ThermoTrex of Waltham -- have begun working on their projects. Both of these companies received the maximum grant of $425,000. These Massachusetts firms were among only 17 such grants given out nationwide. Meanwhile, OTA concluded its role as technical supervisor of a 1994 NICE3 grant (the Commonwealth's first) awarded to Erving Paper Company of Erving. The project was completed, with very impressive results: reductions of more than 400 *tons* of sodium hypochlorite, 37.5 *tons* of sodium hydroxide, and 357.5 *tons* of sulfuric acid. In addition, the company saved more than 5 million KWH in electric power, for a savings of $425,000, and reduced 214,000 gallons of fuel oil, for a total energy savings amounting to $522,000. In addition, OTA continued its collaboration with the Commonwealth's Division of Energy Resources (DOER) in identifying candidate companies and assisting with proposals for the NICE^3 program.

- OTA staff continued to provide technical review and assessment, including the development of experimental protocols for pilot demonstrations, of emerging environmental and energy efficient technologies receiving assistance from the Strategic Envirotechnology Partnership (STEP). During the past fiscal year, OTA increased the number of staff involved in STEP meetings and activities, and became more involved in STEP outreach efforts. For example, OTA staff were invited to the annual meeting of the Government Affairs Committee of RadTech International to discuss the STEP initiative.(Rad Tech is nonprofit organization whose mission is to educate industry, government and academic leaders about the economic and environmental benefits of ultraviolet/electron beam (UV/EB) technologies.)

- OTA has again worked closely with industry, as well as EOEA and TURI staff, to identify industrial problems that require research or technology development. OTA provided a list of possible research topics to TURI as well as STEP's National Envirotechnology for Waste Prevention Institute (NETI) at the University of Massachusetts Amherst. OTA continues to place emphasis on matching possible projects with researchers' areas of interest as the method for developing research topics that are more likely to be the basis of a researcher's proposal. One of the ten projects funded by NETI for FY98 is based on a research topic submitted by OTA. This project (*Mechanical Performance Evaluation of Polyurethane Based Composites for Reduced Isocyanate Demand*) will evaluate the ability to reuse scrap reaction injection molded (RIM) polyurethane material in order to reduce the use of isocyanate compounds. OTA staff also served as technical reviewers for seven of the ten proposals funded.

- OTA staff serves on the Stakeholder group for EPA's Environmental Technology Verification (ETV) pilot for Coatings and Coating Equipment. This program will provide unbiased, third party documentation to verify claims of reduced volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions made by manufacturers of coatings and coating application equipment. As a member of the Stakeholder group, OTA will provide guidance to the program in achieving its objectives: developing standardized test protocols to verify the acceptability of lower polluting coatings and coating equipment; standardizing the verification testing of lower polluting coatings and coating equipment; and increasing the market penetration of lower polluting products by increasing industry's confidence in verification test data.

- OTA staff continued to participate in TURI's Cleaner Technology Demonstration Sites and Matching Grants program by serving as members of the proposal review committee, as well as providing assistance to grant recipients in developing site visit presentations and reviewing project reports.

- For three years, OTA played a major role in the Mercury Workgroup organized by the MWRA which was concluded this year. The purpose of the Workgroup, which included a group of 28 hospitals in the Greater Boston area, was to assist in reducing or eliminating the use of mercury and thereby reduce the loadings to the MWRA system.

Phase 1 of the project identified the problems and created a data base of all sources of mercury. Phase 2 used the data collected during Phase 1 and focused on corrective action, and included the writing of procedures and a management handbook for hospitals as well as bench testing of a number of mercury removal technologies. OTA staff chaired one subcommittee and played a key role in writing the source reduction and pollution prevention sections of the management handbook. In addition, OTA staff was involved in the assistance provided by STEP to MWRA in designing and implementing the bench testing program. This program coordinated the feasibility testing of six promising mercury removal technologies, some of which showed the ability to achieve MWRA's compliance level of <1 ppb. The same OTA staff will also be involved in the subsequent pilot testing of the most promising technologies at selected hospitals in the Boston area. This testing will be performed in FY98.

Outreach and Policy Integration

OUTREACH

OTA intensified its effort to emphasize the connection between TUR and competitiveness and quality issues during the last fiscal year. Also, emphasis was placed on educating municipal agencies and officials about TUR, both as a tool for local regulators to use and as a concept they could implement in their own municipal operations.

A complete list of conferences and workshops OTA sponsored or co-sponsored appears in the appendix. The major highlights of outreach efforts are as follows:

- Publication of five new case studies of companies who reaped economic as well as environmental benefits though TUR projects. Of particular note were case studies about Kidde-Fenwal, who switched to an automated ultraviolet (UV) coating system for printed circuit boards and as a result shaved an entire day off of its production process; and Fit-to-Print, a small screen printer which also installed a UV curing technology that ultimately helped the company boost is sales by 20 percent and hire five new employees. UV curing technologies had been a focus of OTA technology transfer efforts the previous year, and both of these companies were steered toward these technologies by OTA staff during site visits.

- In February 1997, OTA sponsored a conference on hazardous air pollutants that featured presentations by the major chemical manufacturers from around the nation (Dow, Eastman Chemical, Shell and ARCO Chemical). The conference, attended by 104 people, was organized after OTA field work and TURA data suggested many manufacturers are struggling to find acceptable substitutes or to otherwise minimize the use of HAPs. Much of the discussion focused on how to evaluate the effectiveness of potential substitutes, considering the chemical, physical and economic aspects, but some specific new developments were presented. OTA staff wrote an article about this conference that was subsequently published in *Massachusetts Environment*.

- Staff conducted a major conference to boost awareness of TUR and OTA in the Western region, enlisting the support and participation of mayors' offices in Holyoke and Chicopee, and involving the municipal officials of the southern portion of the Western region. The conference pioneered a video demonstration of the destruction by toxic discharge of microorganisms necessary for wastewater treatment.

- OTA was the lead sponsor of two workshops that specifically promoted the integration of TUR into business decisions. OTA worked with Concurrent Technologies Corporation on "Computers and Competitiveness," a workshop on how new electronic data processing and information gathering techniques can be used for environmental performance and pollution prevention information, as well as business development. OTA also sponsored "Regulations, Incentives and the ISOs: Making the Connections." Co-sponsors included the American Society for Quality Control (ASQC) and other organizations recognized by businesses as related to productivity and efficiency. The Acushnet case, wherein TUR planning helped a company achieve the first American triple certification for ISO 9000, 14000, and the auto industry's standard was prominently featured, sending the message that TUR planning has made it much easier for Massachusetts firms to achieve quality standards.

- OTA staff worked closely with two regional waste management organizations to reach 40 school systems and assist with developing toxics use reduction projects. OTA staff developed relationships through follow up work with 15 schools, and coordinated this work with the regional partners. OTA participated in the writing of a toxics use reduction plan (partially funded by a TURI grant) for Northampton schools; assisted in five cleanouts of hazardous waste chemicals, which raised consciousness about the need to reduce hazardous waste generation; conducted training in chemical inventory controls, and participated in the formation of a regional interagency group to promote pollution prevention in schools. OTA received a federal grant for FY 98 to enlarge the training on chemical inventory and the development of TUR assistance capability by regional partners.

- OTA staff continued in FY 97 to be active members of several groups and associations, directly related either to pollution prevention/toxics use reduction programs, specific industrial sectors, or manufacturing issues. Participation in these groups offers opportunities for important information exchanges, raises the visibility of OTA and the TURA program, and provides professional development opportunities for staff members. In addition, OTA's active participation has led and continues to lead to dissemination of the concept of TUR's integral role in decisions about standard business operations. The groups with whom OTA actively participates include:

* American Society for Quality (Chair of both national and local chapter Environmental Committees, and chair of the Boston ISO 14000 Roundtable)
* American Electroplaters and Surface Finishers Society (Members)
* MWRA TRAC Advisory Board (Member)
* Northeast Business Environmental Network (Member, Board of Directors)
* Northeast Waste Management Officials Association (Member, State Directors group)
* National Pollution Prevention Roundtable (Member of Facility Planning and Measurement Workgroup, Member of Regulatory Integration Workgroup, and Founder and Member of the ISO 14000 workgroup)
* Salem Sound 2000 (Member, Advisory Committee for Pollution Prevention Project)
* Worcester Business Development Corp.'s Manufacturing Advocacy Committee (Member, Environmental Regulations Subcommittee)

- OTA also continued its work on the Environmental Integration Project, a collaborative effort among OTA and the Massachusetts Manufacturing Partnership, TURI and DEP. This project is designed to look for and encourage opportunities for the participating agencies to work together in providing TUR and management and operations assistance to Massachusetts manufacturers. This two-year, NIST funded project (MMP is the project administrator and recipient of the NIST funds) will conclude in FY 98, but the agencies' staff will continue to work together when and where it makes sense.

- Five TURA Form S reporting workshops were held across the state in conjunction with DEP, including training in financial analysis for pollution prevention revamped to be more accessible for the process engineer.

- OTA arranged and publicized three downlink sites for the national, EPA-sponsored teleconference for wood furniture manufacturers.

- OTA continued for the second year to author a monthly column published in Manufacturers Mart. Topics included the connections between TUR, ISO and TURA planning; regulatory and environmental issues associated with evaporation of wastewater at metalworking facilities; how technical assistance complements regulatory programs.

- An article by OTA staff on how to incorporate pollution prevention into regulatory permits appeared in the Fall 1996 issue of *Pollution Prevention Review*. As a result, one of the authors was invited to present on this topic at a state P2 conference in Florida.

In addition to the 20 conferences OTA sponsored or cosponsored, over 60 presentations were made at other conferences and meetings. Highlights included presentations on various aspects of TUR and OTA's services to the following groups and organizations:

- Massachusetts Mayors Association
- Fire Chiefs at district and state-wide meetings
- Water Pollution Control Association

- Associated Industries of Massachusetts conferences
- Harvard Medical Association
- American Society for Quality Control.
- Newspaper Association of America "Superconference"
- EPA-sponsored conference for printed wiring board manufacturers

Other highlights:

- Presentation on OTA-developed software for analyzing emissions from spray solvent-based coatings to other state programs.

- For Toxics Use Reduction Planners, a refresher and skill building course on math and chemistry in process assessment.

- At the Massachusetts Manufacturing Partnership's Business Assistance Center, explaining the NICE3 program to increase awareness of the grants.

- At the National Pollution Prevention Roundtable, presentations on the transfer of UV curing technologies; the hospital mercury project; the connection between objectives of the American Society for Quality and the National Pollution Prevention Roundtable.

POLICY

OTA staff members are involved in policy discussion and decisions at the national, regional and state levels. Some of the highlights of the work during FY 97:

National

- OTA staff continued to participate on national Common Sense Initiative committee for the Electronics and Printing sectors. OTA staff chairs a workgroup in the computer and electronics sector, and is a member of the printing sector workgroup. OTA's participation in the printing sector group has resulted in proposals for a national program modeled to a large extent after the Massachusetts Printers' Partnership. OTA's leadership in the electronics sector resulted in a national conference on electronic products recovery and recycling. The conference in Washington, D.C. attracted recyclers, manufacturers of electronics and their components, municipal and state officials, environmental policy analysts and others.

- OTA staff, as the designated Small Business Assistance Program (SBAP) lead in Massachusetts, continued to actively participate in the national discussion about the future of technical assistance and enforcement programs targeted at small businesses.

Regional

- OTA assisted EPA by contributing to the discussion of policy questions relating to the relationship of enforcement and assistance programs. OTA staff assisted EPA Region I in preparing a regional meeting, and made the key presentation on assistance.

- With NEWMOA and the National Roundtable on Pollution Prevention, OTA reviewed opportunities for incorporation of pollution prevention into regulatory programs. Staff assisted in the drafting of comments relevant to the Performance Partnership Grants.

- OTA was invited by EPA - New England to transfer pollution prevention techniques to other countries. At EPA's invitation and expense, OTA staff traveled to Brazil to train environmental staff of CETESB, the environmental agency of Sao Paulo. OTA assisted in the formulation of an International Pollution Prevention Partnership, designed to enlist the support of American multinational companies in upgrading the performance of their subsidiaries and suppliers, launched in FY 98.

State/Interagency

- OTA staff assisted DEP in the development and implementation of the Environmental Results Program.

  -- For the printing industry, OTA assisted with the adaptation of the Massachusetts Printers' Partnership to ERP in all phases of implementation, but particularly with P2 development and recommendations.
  -- For the dry cleaning industry, OTA played a crucial role in the development and implementation of workshops, clinics, rule development and liaison with dry cleaning shops and trade associations. OTA was further able to assist in this effort because it also had been awarded a federal grant for a project to develop technical assistance capabilities among the dry cleaning trade associations. The innovative dry cleaning certified technician program included outreach in the Korean language to the large population of Korean dry cleaners in the Commonwealth.
  -- For the photo processing sector, OTA assisted with the incorporation of P2 into the program.

- OTA began working on a federally-funded interagency project (with the Attorney General's Office and DEP) to develop joint industry/government guidance on compliance and pollution prevention for autobody shops. The project will include development of a workbook to be used as a screening enforcement tool and a plain language guide for those who attempt in good faith to comply with the law.

- OTA was awarded a federal grant to develop model unified emergency plans. To prepare for outreach on these plans, OTA met with the State Emergency Response Commission and EPA. Two outreach events were held at which the integration of emergency planning and pollution prevention were explained. OTA staff assisted the Northeast Business Environmental Network in developing a similar program, and presented at municipal events in Woburn and Everett.

- OTA's Grease Prevention workshops, conducted in response to great demand from sewage treatment districts, have resulted in discussions between POTWs and the Plumbing Board to address the upgrading of rules for preventing discharges to sewer systems.

- OTA assisted the environmental staff of the Operational Services Division in the development of standards for the selection of environmentally preferable products. This entailed a review of all previous and current efforts by other jurisdictions and development of a request for information, to invite comment from businesses, other agencies, and other interested parties. It involved research into and understanding of many existing chemical lists and their purposes. The first project focused on standards for cleaning products.

- OTA assisted the state Department of Food and Agriculture in the formation of the Integrated Pest Management Council.

- OTA is cooperating with the Department of Public Health and the Low Level Radioactive Waste Management Board (LLRWMB) in efforts to assist facilities using radionuclides to reduce and/or eliminate the use of these materials. OTA staff serve on the Minimization Working Group organized by LLRWMB.

- OTA staff attend the monthly meetings of the TURA Science Advisory Board in order to stay abreast of their discussions regarding delisting petitions and the categorization of the TURA list of chemicals. Though not a member of the Board, OTA's presence at their meetings has enabled us to provide background information on the use of TURA chemicals (e.g., quantities, how chemicals are used by industry) that has been useful to the Board in their discussions.

Watershed Work

In FY 97, each of the technical teams actively participated as members of the various EOEA Basin Teams. In addition to providing input on TUR opportunities and considerations as part of each team, OTA staff invested an significant amount of time participating in the development of the overall policy and direction of the Massachusetts Watershed Initiative.

- Two OTA staff shared leadership responsibilities for the interagency Ten Mile River Basin Team. Besides organizing and leading regular meetings of the team, these two staff member spent many hours in February and March preparing for public presentations which occurred at 7 evening meetings in the Ten Mile watershed.

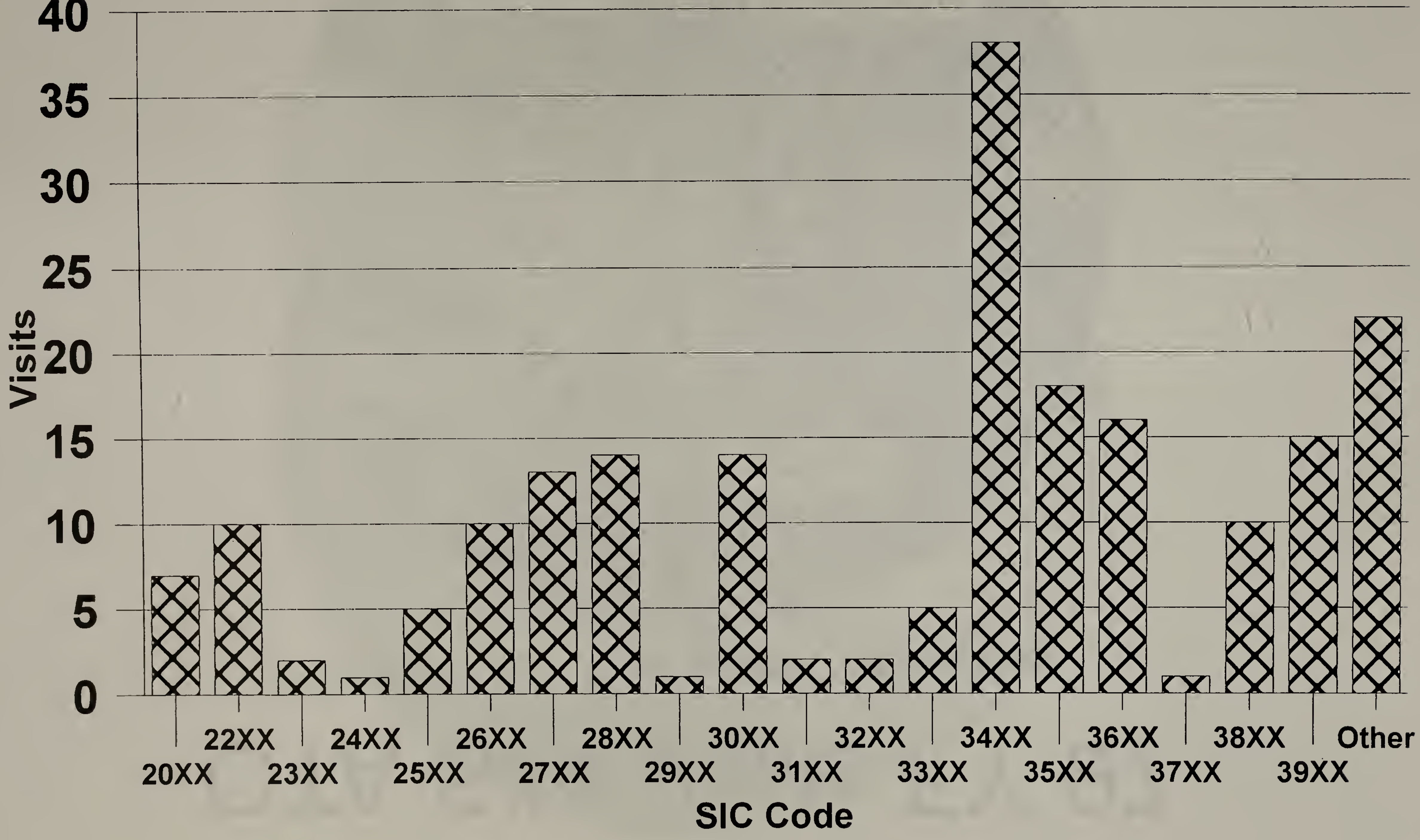
- OTA staff has been an active member of the statewide Watershed Initiative Steering Committee, which meets monthly.

- The OTA Director has been an active member of the Watershed Initiative Transition Team, which met weekly during FY '97. The Team's task was to offer review and input to proposals for the restructuring of the Initiative. The Team's work is expected to be complete in FY 98.

- The Metro Team has been particularly active in supporting the work of Salem Sound 2000, a non-profit watershed group on the North Shore. OTA serves on an advisory committee for the group's industrial pollution prevention project and has pledged support on specific projects with businesses and municipalities as part of a federal grant proposal submitted by the organization.

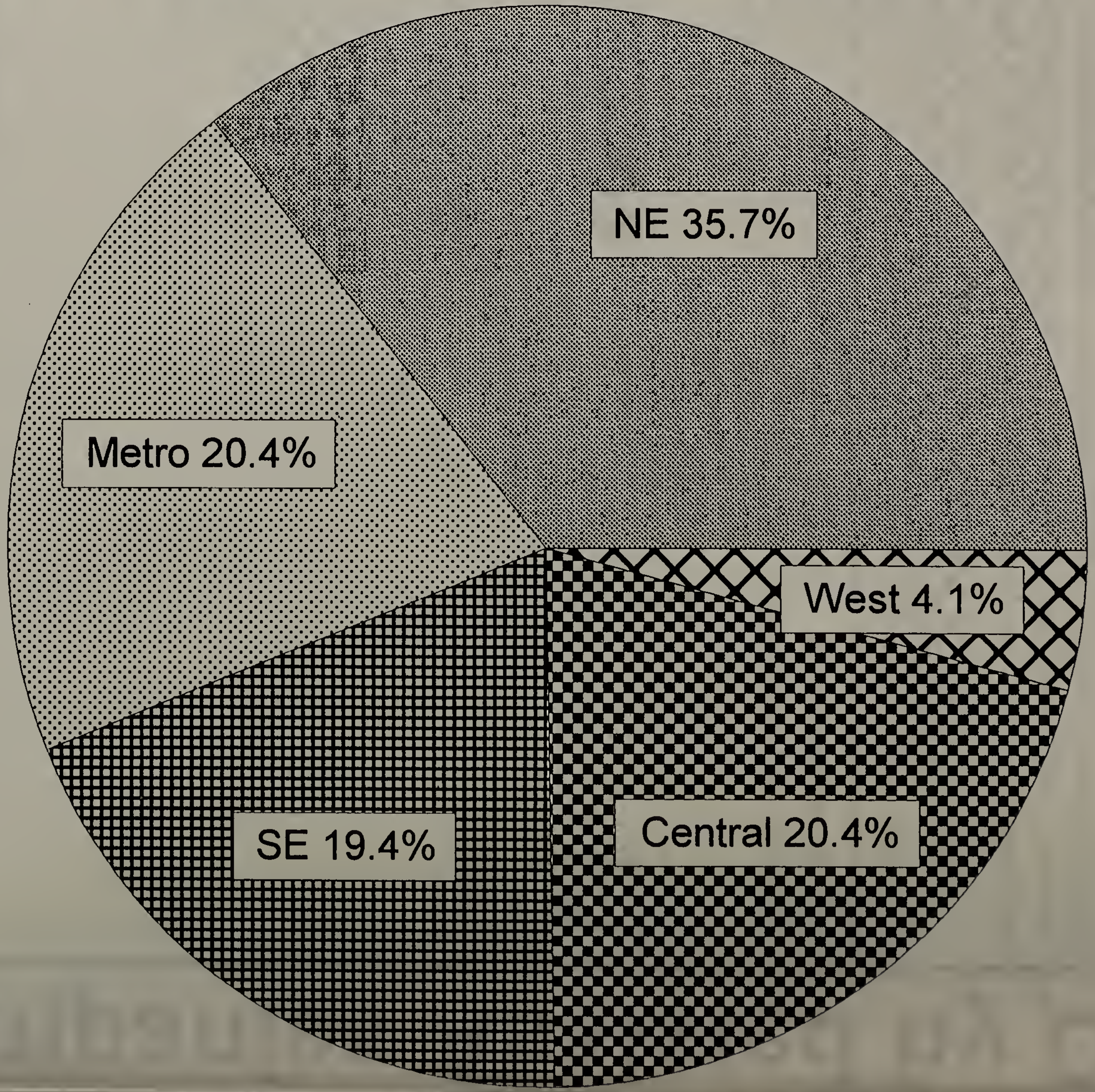
Companies Assisted by OTA

FY 97



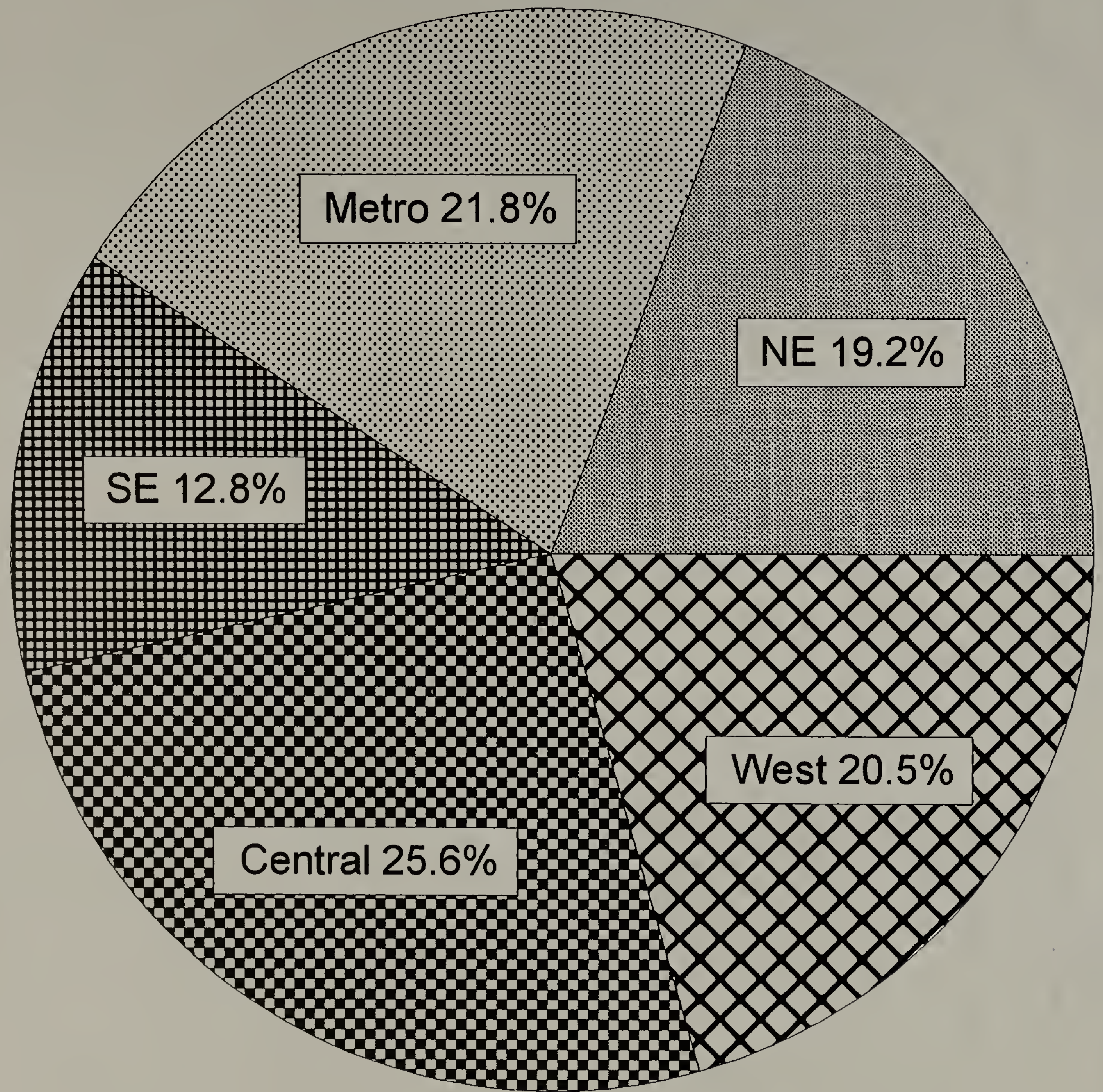
OTA Site Visits FY 97

Follow-Up Visits to 98 Companies



OTA Site Visits FY 97

(78) New Companies



OTA Events Database Listing

Name	Location	Date	Credits	Attendance
Alternatives to Hazardous Air Pollutants	Needham	2/13/97	4.00	104
Cleaner Communities:A Wkshp for Business & Municipal Officials	Holyoke	10/9/96	4.00	145
Computers & Competitiveness:Business Opportunities thru Electronic Data Interchange (EDI)	Easton	9/10/96	0.00	26
Computers & Competitiveness:Business Opportunities thru Electronic Data Interchange (EDI)	Worcester	12/12/96	0.00	27
Environmental Expo	Boston	4/29/97	0.00	
NICE3 Workshop	Worcester	10/15/96	0.00	10
Regulations,Incentives,& the ISOs:Making the Connection	Sturbridge	3/12/97	0.00	94
Restaurant Grease Reduction Wkshp	Newburyport	10/16/96	0.00	193
Restaurant Grease Reduction Wkshp	Southbridge	3/26/97	0.00	130
Restaurant Grease Reduction Wkshp	Dedham	6/18/97	0.00	185
TURA 1996 Form S Workshop	Haverhill	5/13/97	3.50	37
TURA 1996 Form S Workshop	Worcester	5/14/97	3.50	66
TURA 1996 Form S Workshop	Wellesley	5/19/97	3.50	32
TURA 1996 Form S Workshop	Taunton	5/21/97	3.50	69
TURA 1996 Form S Workshop	Westfield	5/28/97	3.50	54
Wood Furniture Teleconference	Fitchburg	9/18/96	2.00	20
Wood Furniture Teleconference	N. Easton	9/18/96	2.00	18
Wood Furniture Teleconference	Wellesley	9/18/96	2.00	8

THE TOXICS USE REDUCTION INSTITUTE
(TURI)

Fiscal Year 1997 Accomplishments

The Toxics Use Reduction Institute is one of the four authorities established under the Massachusetts Toxics Use Reduction Act of 1989 (M.G.L. Chapter 21I) to implement the law. The Institute was established at the University of Massachusetts Lowell with initial state funding in September of 1990. The mission of the Institute is to promote reduction in the use of toxic chemicals or the generation of toxic by-products in Massachusetts industry and commerce.

The Institute is administered by a Director and three Associate Directors. The Director and Associate Director for Research are employed as members of the University faculty. In addition, the Institute employs fourteen professional staff and five clerical staff. Each semester the Institute hires several student interns. Otherwise, the Institute contracts with over 20 professionals to assist in training, research and technical programs.

In order to carry out its mission, the Institute has been organized into four staff clusters: Research, Education and Training, Technical Support and Administration. The program of the Institute is developed from ten mandates set out in the authorizing legislation. The program is reviewed annually during a retreat held in January at which time a Strategic Plan for the year is drafted. The Strategic Plan then becomes the guide for developing the annual budget set for financing the achievement of the various goals identified for each cluster.

Program review and assessment occurs through weekly staff meetings. In addition, a special Policy and Planning Committee made up of representatives of each cluster meets weekly to address personnel issues and longer term policy and planning issues. The Institute is advised by two advisory boards; one representing industry and one representing the public interest community. A list of the members of each of these advisory boards is included in Appendix B.

The University has provided the Institute with office space, training rooms, and laboratory space in Pinanski Hall, one of the central buildings of the School of Engineering. In addition the University provides parking and building services.

The Institute works in close collaboration with the other state agencies charged with implementing the state toxics use reduction (TUR) program. The directors of the Office of Technical Assistance, the Toxics Use Reduction Program in the Department of Environmental Protection, the Administrative Council and the Institute meet in monthly coordinating meetings to integrate work within the Toxics Use Reduction Act (TURA) program

Fiscal year 1997 marked the sixth full year of formal operations for the Toxics Use Reduction Institute. This year has demonstrated the effects of a fully mature program and staff.

1997 RESEARCH

- **The Institute completed the Toxics Use Reduction Act Program Evaluation**

The administrating agencies of the Toxics Use Reduction (TURA) program jointly administered an evaluation of the TURA Program, which began in FY95 and will concluded after the release of the 97 TURA data. The agencies formed a steering group made up of two representatives from each agency to coordinate the planning and implementation of the evaluation. The evaluation was spearheaded by the Institute.

The steering group obtained advice and assistance from a multi-stakeholder consultation group. The consultation group included representatives from the TURA Advisory Board, TURA filers, environmental organizations, and individuals expert in the field of program evaluation.

The TURA program evaluation encompassed a number of components, including:

- **Mandates fulfillment analysis** - an assessment of whether the TURA agencies have fulfilled the specific mandates contained in the Act
- **Program Impact Analysis - an assessment of the impact of TUR on Massachusetts Companies** The Program Impact Analysis focuses on the firms that are required to report and plan under TURA. Data gathered for this analysis came from a survey of Large Quantity Toxics Users (LQTUs) and from an in-depth investigation of 25 LQTUs.
- **Cost/Benefit Analysis - an assessment of the public and private costs and benefits of the TURA program**
- **Policy Goals Fulfillment Analysis - an assessment of whether the program has achieved the six policy goals of the Act** This analysis involved an assessment of the program's performance against the goal of 50% reduction in toxic waste by the year 1997 (Goal 1 of the Act), involving an in-depth look at the TURA data including the construction of the 1987 baseline, trend and sectoral analysis, and data normalization.

The final report was completed and submitted to the Administrative Council in March of 1997.

- **The Institute hosted a successful "Mr. Clean" Conference on alternative surface cleaning technologies**

The Institute hosted one of the nation's foremost technical conferences on alternative surface cleaning technologies, a conference called the "Mr. Clean Conference". The Conference brought over 80 participants from throughout the country to a two day meeting that explored new directions in surface cleaning as well as highlighted the tremendous progress being made here in Massachusetts. TUR Planners in attendance earned 198 continuing education credits.

- **The Institute conducted a sixth year of the Research Fellows Program**

FY 96 marked the sixth year of the Research Fellow's Program. The program, established in 1991, taps into the research capabilities of the University by supporting graduate students to perform toxics use reduction technical and policy research. This year, the Institute awarded three fellowships in the following areas:

  - Evaluation of Additive Technologies in the Printed Wiring Board Industry, Mechanical Engineering,
  - Development and Testing of PP/OASys--The Pollution Prevention Options Assessment System, Work Environment
  - Surface Cleaning Research, Environmental Engineering

- **The Institute merged its tradition Matching Grants Research Program and its "Cleaner Technologies Demonstration Sites Program" to fund five industry projects.**

The broad goal of the combined program is to develop new cleaner technologies and to demonstrate the effectiveness of toxics use reduction in promoting these technologies to Massachusetts industries. The program allows individuals and firms to observe and assess first-hand the value of specific innovative technologies and processes through site visits to participating facilities, and related workshops and publications. Further goals of the program include showcasing the implementation of cleaner technologies to raise awareness of the associated opportunities and benefits, and to examine methods of adoption in order to improve the Institute's process of assisting industry. The recipients included:

  - General Dynamics Defense Systems, Pittsfield
    Design for Environment Workshops
  - Leach and Garner Company, North Attleboro
    Ammonia Reduction for Heat Treat Furnace Atmospheres
  - Ocean Spray Cranberries, Middleboro
    Elimination of Cooling Tower Chemical Additives
  - Parlex Corporation, Methuen
    Innovations in Printed Wiring Board Manufacture
  - Tri-Star Technologies, Methuen
    Cupric Chloride Etch Regeneration

- **The Institute continued to provide testing and evaluation services to Massachusetts firms in its Surface Cleaning Laboratory.**

The laboratory has expanded to include a centrifuge, EPA-certified water testing equipment, a viscometer and a refractometer. Laboratory testing was performed for 36 companies; over 75% of these were from the metal working industry. Over 50 cleaning trials were performed, including off-site testing at vendor locations. Twenty-two plant sites were visited by laboratory staff.

The first full-day cleaning training was introduced into the TUR Planners training curriculum. Staff participated in an additional thirteen educational events and prepared four reports for publication.

- **The Institute prepared a volume of problem sets for promoting Pollution Prevention in Engineering Curriculum**

The Institute worked with faculty at the Universities of Massachusetts, Vermont and New Hampshire and Dartmouth College to prepare a volume of homework assignments on pollution prevention and toxics use reduction that could be integrated into conventional engineering curricula.

- **The Institute continued the summer "inTURnship" program with University of Massachusetts students and Massachusetts industries.**

The Institute's first summer "inTURnship" program matched four students from UMass Lowell's College of Engineering with Massachusetts industries. This year the Institute supported four more students. The students worked on TUR projects for the companies. In addition to matching the students with the industries, Institute staff provided a three-day, intensive TUR training program for the students. The four companies and projects are as follows:

- Acushnet Rubber Company, Inc. - to move Acushnet toward ISO 14001 certification and to identify opportunities for TUR in the ISO 14001 requirements.
- K&M Electronics, Inc. - to identify and evaluate options to replace HCFCs used to deflux circuit board assemblies.
- Adtec Electroplating - to identify TUR options through industrial hygiene audits.
- Raytheon Electronic Systems - to evaluate the compatibility of low-VOC conformal coatings with soldering masks.

- **The Institute completed the report on Measuring Progress in Pollution Prevention**

With a grant from the U.S. EPA the Institute led an effort that involved OTA and DEP in working to improve and better understand the TUR "Form S" annual reporting data. This included a quality check on the data, an effort to establish the 1987 baseline for program performance measurement and a common set of metrics for measuring progress in toxics use reduction and waste reduction.

- **The Institute continued to work with the Science Advisory Board on petitions for listing and delisting chemicals.**

Since the formation of the Toxics Use Reduction Science Advisory Board, the Institute has asked for recommendations from the Board regarding petitions for delisting materials from the TUR Toxic or Hazardous Substance List. After considering petitions for delisting ethyl acetate, acetic acid, sodium hypochlorite, acetone, and zinc oxide, the Board recommended delisting acetic acid (in concentrations below 12%) and zinc oxide and to not delist ethyl acetate and sodium hypochlorite. The Board split its vote on acetone and the Institute then recommended that the substance not be delisted. Otherwise, the recommendations of the Board were forwarded to the Administrative Council and approved as recommended.

During the Spring the Board began a process for considering the categorization of substances on the List in order to better recognize the highly varied levels of hazard of the substances. The Institute is working with the Board to assist in this exercise.

- **The Institute worked with OTA in preparing a Guide for Parts Cleaning Alternatives**

In response to a survey of Massachusetts manufacturers, the Institute and OTA staff prepared a comprehensive "Guidebook on Parts Cleaning Alternates" for those considering the adoption of new technologies. This guide provides descriptions of alternative technologies and financial and regulatory analysis tools and is based on:

- cleaning processes currently being used
- industry needs related to switching away from chlorinated solvents
- preferred methods for OTA and TURI to use in meeting those needs

- **The Institute Sponsored a study of Near Zero VOC Lithographic Ink and Blanket Wash Systems**

In February the Institute published a study of Near Zero VOC Lithographic Ink and Blanket Wash Systems. This study which received funding from the federal EPA evaluated the effectiveness of the "Delux Printwise" system.

- **The Institute assisted with one STEP Research project**

The Institute worked with the Massachusetts Strategic Enviro-technology Partnership (STEP) on one research project. This project focused on non-cyanide plating technologies.

- **The Institute sponsored a workshop on Design for the Environment**

Following a workshop at the TUR Planners Continuing Education Conference, Institute staff convened a day-long workshop for leaders in the Design for Environment initiatives in their firms. The workshop was held in June and brought together 20 representatives from Massachusetts firms.

- **The Institute supported trainings on Micro Scale Chemistry at Merrimack College Microscale**

Merrimack College offers one of the nation's best training programs in micro scale chemistry, a new chemistry laboratory management system that greatly reduces the volume of toxic chemicals used and the waste generated by chemistry labs. With funding from the Institute, Merrimack College prepared five training workshops for high school, college and industrial laboratory managers.

1997 EDUCATION AND TRAINING

- **The Institute presented two sections of the Toxics Use Reduction Planner Training Course to over 41 participants.**

Two TUR Planner Training Courses were held one in Lowell and one in Braintree. Since 1992 twenty-seven classes have been offered to over 699 people. The 26th TUR Planner class marked the fifth year anniversary of the first TUR Planner Class given. The Industry Specific Day at the conclusion of the class is also offered as a continuing education opportunity for recertification credits for planners. 206 Certified TUR Planners, class attendees and interested parties attended the two Industry Specific days.

Refresher courses were also offered to 33 people to prepare the 26th and 27th TUR Planner Classes for the Toxics Use Reduction Planner Examination offered by the Massachusetts DEP on April 29, 1997.

The TUR Planner Curriculum was revised and updated as the eighth edition.

- **A TUR Planners Training Course Instructor Summit was held.**

Twenty-three trainers attended a day-long curriculum review in October to assess the course and improve training techniques.

- **Continuing Education opportunities were presented in the Second Toxics Use Reduction Planner Continuing Education Conference.**

The Conference, offered in conjunction with DEP and OTA, was held in February of 1997 in Marlborough. The conference presented eighteen workshops and a poster session addressing TUR Planners requests and requirements. 301 participants attended and over 3,924 TUR continuing education credits and 72 non-TUR credits were awarded. The proceedings from the February conference were mailed to over 250 participants in the September of 1997.

- **The Institute completed a Curriculum and Training Manual for Garment Wet Cleaning.**

With support from the U.S. EPA, the Institute developed and piloted a curriculum and training manual for dry cleaners considering a switch to garment wet cleaning systems.

- **Three issues of the Toxics Use Reduction Planner Newsletter, *TURP Talk*, were distributed to over 3200 people.**

The newsletter is dedicated to providing articles of interest to TUR Planners and a forum where planners may share experiences in developing and updating plans. A distribution list of over

3200 people received issues of *TURP Talk* which includes an update on the Toxics Use Reduction Planners Association activities.

- **The Institute sponsored a "Environmental Leader's Introduction to TUR"**

This special retreat held during the summer of 1996 provided a two day training for twelve representatives of environmental and community advocacy groups. The training involved meeting TUR Planners and various state government officials.

- **The Institute worked with OTA and DEP on the development of Pollution Prevention Training programs for State Regulatory Staff.**

With support from a federal EPA grant to the DEP, Institute staff developed and piloted curriculum for assisting state regulatory staff in adapting to the new practices necessary to promote pollution prevention through permitting, compliance and enforcement. This project produced a series of eight modules, a training curriculum and instructor guides.

1997 TECHNICAL SUPPORT

- **The Institute's Technology Transfer Center continued to provide a significant level of service to those seeking technical information.**

Established in 1992, the Technology Transfer Center (TTC) acquires, organizes and disseminates information on new technologies and materials that promote toxics use reduction. Since January 1995 the TTC has grown strategically in holdings and services:

- Over 2000 books added to its holdings, bringing to total to about 7000
- Subscribes to 110 journals and newsletters, up 40 titles
- Responded to 1350 requests for reference services or Institute publications
- Serves TURI's research and training staff at a high level

A new librarian was hired in June of 1997 and the TTC stacks are undergoing reorganization and more comprehensive cataloguing, which will facilitate user research and reference services.

- **The TTC Electronic Data Base and Search Capacity has been greatly expanded.**

The TTC database has been merged with "Techinfo", which represents the work of about 10 states' programs in creating a bibliographic database of resources for pollution prevention technologies. Over a third of the total 15000 entries on this national database are from the TTC. "Techinfo" is available on "Envirosense", which is the Internet web site for the US EPA.

An Institute web site was created in August 1995, and this year was redesigned and expanded to more fully represent the full range of products, services and activities of the Institute. Descriptions, reports and announcements about technology research, TUR policy research, learning, communities and information services are now available.

- **The TTC has developed a specific electronic search system for Toxics Use Reduction Planners**

"P2Gems" is an Internet based tool designed to assist TUR Planners in finding information about emerging clean technologies and management tools for technology adoption. It was updated in July 1996. The update doubled its size in response to the many new sources of information on the Internet about cleaner technologies. There have been 1500 visits to this site since its creation, and comments from users are very positive.

- **The TTC has developed a sophisticated support program for the Northeast Business Environment Network**

An online librarian/engineer and web site manager provides assistance to the Northeast Business Environment Network (NBEN). Usage of the NBENS Online site by regional businesses, academics and government is increasing. Between February and May there were over 6000 visits to the page.

- **The Institute participated in annual Environmental Trade Shows throughout the year.**

Outreach to build awareness of the TTC includes presence of a specially designed information booth at the New England Environmental Network Conference and the Environmental Exposition trade shows. These shows generate many new requests for reference services, and result in the distribution of hundreds of Institute publications and brochures.

1997 ADMINISTRATION

- **The Institute continued its special Community Education Program to offer local-level training in toxics use reduction.**

Institute staff continued and expanded its grants program called "ToxicsUseReduction Network"(TURN) to encourage non-governmental organizations to develop community-based training programs to promote toxics use reduction. This year the program was expanded to include a section open to local government organizations as well. This year, the Institute received over 35 applications from local and municipal organizations.

During the fall of 1996 the Institute worked with an advisory review board to select seven non-governmental organizations and five local government organizations to receive awards. Funds ranged from $8,000-$3000. Programs included curriculum development, conferences, workshops and information sharing. The groups receiving the awards were:

- Boston Police Department, Boston
- Massachusetts Fire District 14, Northborough
- Center for Ecological Technology
- Northampton Board of Health, Northampton
- Springfield Local Emergency Planning Committee, Springfield
- Green Decade Coalition, Newton
- John Snow Institute, Boston
- Lawrence Grassroots Initiative, Lawrence
- Massachusetts Alliance of Portuguese Speakers, Somerville
- Massachusetts Coalition for Occupational Safety and Health, Boston
- South Cove Community Health Center, Boston

- **The Institute prepared and delivered one issue of *TURA Reports*, the program wide newsletter.**

The Institute has taken responsibility for publication and dissemination of the newsletter of the state Toxics Use Reduction program. The ten-page newsletter, *TURA Reports*, is distributed to a large mailing list that contains over 4800 addresses including all TURA filers and all state legislators.

- **The Institute participated in the selection and presentation of the Governor's Awards in Toxics Use Reduction.**

The administrative staff assisted the state Toxics Use Reduction Advisory Board in the organizing and logistics on selecting and presenting five Governor's Awards..

THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP)

Fiscal Year 1997 Accomplishments

Under the Toxics Use Reduction Act the Department of Environmental Protection has a number of responsibilities:

- to develop and maintain specific toxics use reduction planning and reporting regulations;
- to manage planning and reporting data;
- to collect and distribute fees from the regulated community;
- to establish and manage a program for certification of toxics use reduction planners;
- to establish a bias towards toxics use reduction/pollution prevention as a preferred means of protecting the environment;
- to incorporate a multi-media focus into its regulatory programs; and
- to work with other TURA agencies to implement and improve the TUR program.

Fiscal year 1997 was highlighted by positive organizational developments, on-time completion of all program projects, and continued emphasis on compliance with the TURA statute. This created additional opportunities for cooperative TUR projects with other TURA agencies and has strengthened the overall program within the Department.

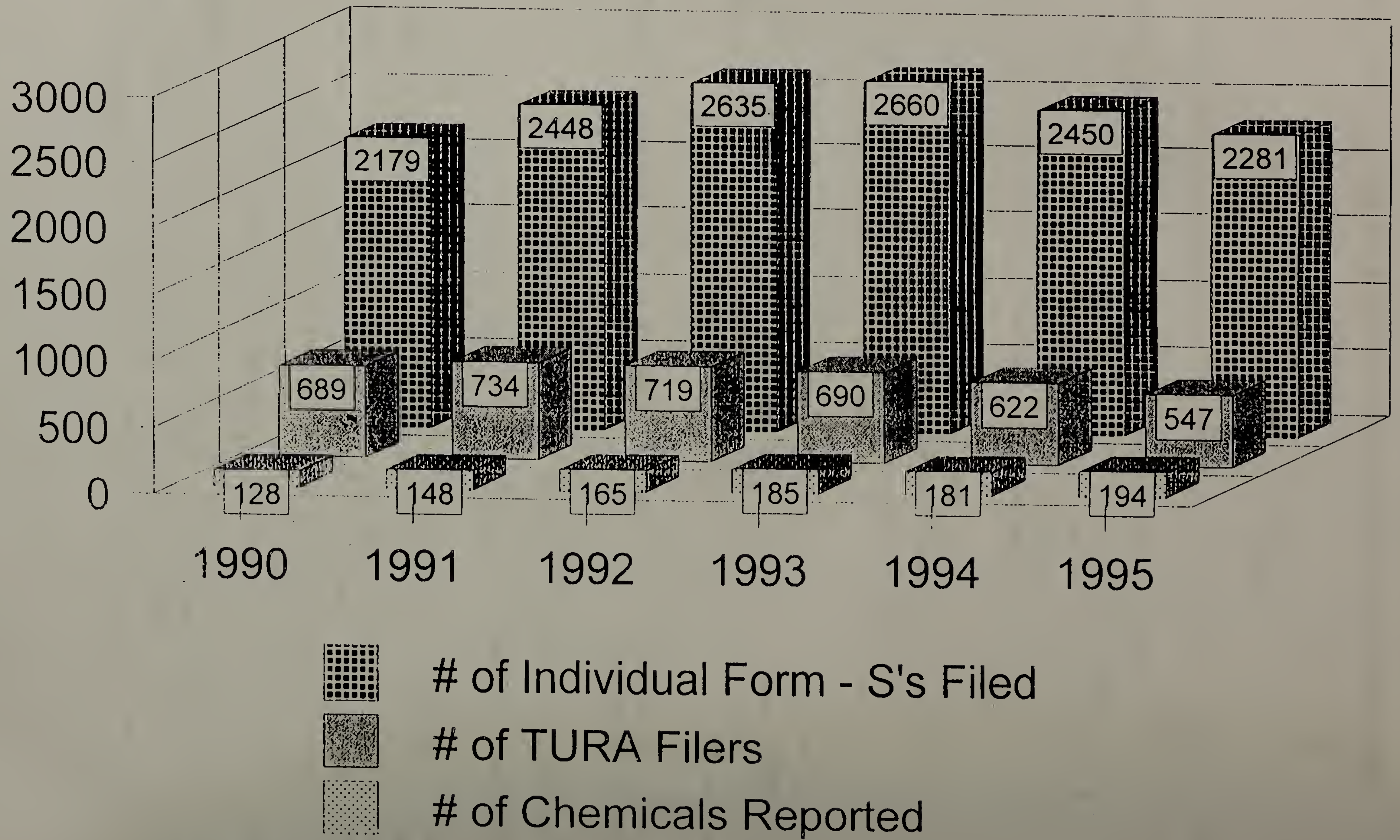
The following highlights FY 1997 accomplishments in the areas of program implementation and program development.

DEP TURA/P2 PROGRAM IMPLEMENTATION ACCOMPLISHMENTS

1995 Toxics Use Reduction Reporting Information

Information gathered from the regulated community was entered into the TURA information system, quality assurance/quality control procedures were implemented and corrections were received from the regulated community. The information was analyzed and released to the public in January 1997. A total of 547 facilities filed 2281 forms for 1995. The total reported amount of toxic chemical byproduct generated declined 9% from the previous year. The amount of toxic chemical byproduct reported by facilities declined 19% from the amount reported in 1990. The amount of toxic chemical use decreased 3% from 1994 to 1995, and since 1990 there has been a 8.2% decrease in use by facilities. This public release of data was completed by a team consisting of representatives from DEP, the Toxics Use Reduction Institute (TURI), and the Office of Technical Assistance (OTA), and included more information than in previous years. The 1995 data release included 1995 highlights, core facility trends, and projected use and byproduct 1995-2000.

TURA Filer Trends 1990-95



Compliance and Enforcement

DEP conducted approximately 1,000 multi-media inspections. This equals roughly 4,000 single medium equivalent site activities (approximately 2,000 single media inspections and 2,000 single medium screening activities). Multi-media inspections are whole-facility inspections that simultaneously check for compliance with applicable environmental rules for air, industrial wastewater, hazardous waste, and the Massachusetts Toxics Use Reduction Act. These inspections are also used to identify TUR and other pollution prevention options, and to promote TUR as a sound management practice, as well as the preferred means of achieving environmental compliance.

In addition, DEP staff conducted on-site inspections at 110 TURA reporting facilities. The TURA filing facilities' reports and plans were reviewed for accuracy and completeness. As a result of inspection efforts, approximately 30 facilities were issued enforcement actions for their TURA violations.

Toxics Use Reduction Planner Management Accomplishments

The Toxics Use Reduction Planner Program reviewed and certified approximately 541 planners as either General Practice Planners, "GP" (a GP may certify TUR Plans and Plan Updates for any facility in the Commonwealth) or Limited Practice Planners, "LP" (an LP can only certify the TUR Plan or Plan Update of the facility at which he or she is employed). In addition, the Planner Program has also recertified approximately 456 planners as either GPs or LPs for a second 2-year period.
A TUR Planner Examination was held on May 17, 1997. The exam was taken by 19 individuals. From this group, 17 achieved passing scores and 2 failed.

The Department works extensively with the Toxics Use Reduction Institute (TURI) to maintain the planner continuing education unit approval activities. This includes, but is not limited to, the review of applications for course credit determination, attendance information, records of participation and continuous improvement coordination.

DEP TURA/P2 PROGRAM DEVELOPMENT ACCOMPLISHMENTS

1996 Reporting Guidance and Trainings

The Department completed development and outreach to the regulated community in preparation for the annual 1996 TURA Form S submittals. This included the development of the 1996 TURA Form S Reporting Package. The 1996 Reporting Package was written in an innovative, user-friendly manner which included a Common Questions and Answers appendix and a Common Reporting Errors appendix, in addition to other useful appendices. The reporting package and outreach trainings included OTA and TURI participation and involvement.

TURA User Segment Regulations

The Department promulgated the final TURA user segment regulations, as required under Section 3(G) of the TURA statute, in April, 1997. In addition, DEP completed and distributed a response to comment document to all of those who presented testimony during the public comment period.

1987 TURA Baseline Report

DEP conducted a survey of TURA facilities that filed in 1990 in order to measure progress in toxics use reduction and reduction of toxic waste from 1987 to 1997, as required under the TURA statute. The purpose of the survey was to estimate the amount of toxic chemicals use and waste, or byproduct, generated that would have been reported in 1987, had TURA reporting been required at that time. The survey was conducted with advice from the Toxics Use Reduction Institute, the Toxics Use Reduction Program Evaluation Consultation Group, and a survey expert from the University of Massachusetts at Boston.

Although the majority of facilities surveyed would have met the reporting criteria in 1987, most of the facilities surveyed did not have the capacity to provide precise information about 1987 use and byproduct. With this caveat in mind, the survey data yielded the following results:

	Estimated Change From 1987 to 1990
Total Toxic Chemical Use	3% Increase
Total Byproduct	1% Decrease

Background information on the survey and conclusions of the study can be found in the "1987 TURA Baseline Report", prepared by DEP in March, 1997.

TURA Information Management Improvements

DEP focused on continuing to improve and maintain the quality and usability of the TURA information systems. This included coordination with DEP's MIS program to review and implement upgrades to the TURA operating systems. For example, DEP will be changing the TURA data extract procedure to make it more "user friendly" to read and download TURA information.

A working group consisting of representatives from DEP, TURI, and OTA have contributed to the improvement of DEP's TURA information systems.

The DEP TURA program developed a PPIS proposal for the Bureau of Waste Prevention and the Massachusetts Manufacturing Partnership. In this proposal, DEP requested a grant to develop a disc-based electronic TURA reporting system. However, this proposal was not funded.

TUR Planner Management Program Improvements

The Toxics Use Reduction Planners Association (TURPA) is the professional association of TUR Planners. It meets on a quarterly basis, and at typical meetings members discuss issues of concern to TUR Planners, such as regulatory and agency issues, technical education, and professional activities. Representatives of the Department's TURA Program meet monthly with this stakeholder group to discuss issues specifically relevant to the relationship between the Department's Planner Program and TURPA, such as certification, recertification, planning and education.

DEP continues to host TUR Planner breakfast meetings between the TURA Program and members of the TUR Planners' Association to discuss issues affecting TUR Planners, such as DEP policy initiatives, regulatory development, and enforcement procedure.

The Department, in coordination with the Toxics Use Reduction Institute (TURI), maintained and improved continuing education unit (CEU) activities. Efforts included an improved system for course approved for CEU credit and increased coordination with universities and non-governmental organizations for course offerings and approvals.

The Planner Certification Program has researched, produced and distributed to all planners a Directory of Courses and Activities Previously Approved for Toxics Use Reduction Planner Recertification Credit (Planner Course Directory). The development of the Planner Course Directory is in direct response to numerous requests from planners for a listing of courses and activities taken by planners, which have been approved by the Department for recertification credit. The Planner Course Directory provides course names, sponsors, and telephone numbers when available.

Both the TUR Planner Certification and Recertification Guidance Documents were revised and updated, reflecting the decrease in certification and recertification fees for each planner's second recertification period and Internet access to application packages.

New Trade Secret Handling Procedures

During the Winter of 1997, a need to examine our Trade Secret Handling Procedures arose. The program took this opportunity to evaluate procedures which had been in-place and revise the procedures. A "Blue Ribbon Commission" was assembled, and their recommendations were added to the DEP revisions. Several products were produced as a result of this effort, including a manual for handling all TURA information "TURA Filer Information and Trade Secret

Information Management Procedures". Filers were given specific instructions on how to properly file Trade Secret filings.

Bureau of Waste Prevention Reorganization

DEP's Bureau of Waste Prevention underwent an organizational realignment, effective May 21, 1997. Within the realignment, the Waste Programs Planning Unit was created in the new Planning and Evaluation Division. The DEP TURA program is now located within the TURA/Pollution Prevention Branch of the Waste Programs Planning Unit. The TURA/Pollution Prevention Branch is responsible for managing the DEP TURA program and providing leadership for the Bureau's pollution prevention programs.

Regional Office Coordination Improvements

Regional program personnel participated in the development and review of a TURA enforcement guidance for regional compliance and enforcement personnel. The guidance will assist other regional staff in conducting and completing TURA inspection and enforcement activities.

The Department initiated a project to better track and manage TURA enforcement in regional offices. This included accumulation and analysis of TURA enforcement information. Each regional office was individually supported to assure accuracy of the information, improvement of inspection processes and better coordination of inspections and enforcement of TURA.

The Department initiated quarterly TURA Coordination meetings to discuss TURA issues in the regions, to discuss TURA activities in Boston, and develop coordinated decision making on TURA program activities.

Environmental Results Program

The Department initiated the Environmental Results Program (ERP) with several industry sectors and groups, including the dry cleaning, photoprocessing, sewer connections, combustion sources and printing industries. The Department also developed guidance assistance and outreach programs for dry cleaners and photoprocessors with a strong emphasis on pollution prevention and innovative technologies.

DEP TURA/P2 staff supported numerous projects, with an emphasis on dry cleaners, for ERP. This included the development of revised air quality and water quality regulations, negotiations with the US EPA and ERP stakeholders throughout the state. Thirteen statewide workshops were conducted for the purpose of providing guidance to dry cleaners.

A dry cleaning workbook was created which summarized industry regulatory requirements in simple language. The workbook included pollution prevention suggestions and innovative technology application to dry cleaning processes. Three workshops were also conducted in

Korean, and workbooks were translated into Korean. Workbooks and certifications were distributed to over 800 dry cleaners throughout the state. One hundred and sixty-five Korean speaking dry cleaners attended three workshops which were specifically designed for them. Korean trainers delivered the presentations and all the materials distributed were translated into Korean.

TURA FY 98 PLAN

TARGETING TURA RESOURCES (INDUSTRY AND GOVERNMENT) TO MAXIMIZE SUCCESS

Streamline Unnecessary Paperwork

- The 1996 TUR Plan Update experience will be assessed and a modified approach for 1998 will be developed. TUR Reporting and Planning Update and Form S Workshops will be redesigned for 1998 and focus on making planning useful and a part of ordinary business decisions. DEP, with assistance from OTA and TURI, will develop the 1997 TURA Plan Update Guidance and 1997 TURA Reporting Instructions with input from the Toxics Use Reduction Planners Association, business and various stakeholders to improve the instructions and make TURA filing more effective. Focused efforts will be directed towards specific industry sectors, such as chemical distributors, that achieve potentially limited benefits from preparing TUR plans.

- A case review process will be designed and implemented to allow TURA filers to request relief from planning/fee requirements based on proven TUR success, the lack of TUR opportunities, or the successful institutionalization of TUR into the company's business, such as the implementation of an effective environmental management systems (EMS), ISO 14001 Certification, etc. DEP and OTA staff will continue to evaluate and provide information on the effectiveness of ISO type management standards. As part of this effort, incentives to encourage industry mentoring in exchange for fees will be investigated.

- The above efforts will be used to define and to test new strategies to encourage companies to achieve higher standards than regulatory compliance, to expand planning efforts beyond chemical use to encourage reductions in total environmental impact, to investigate product stewardship and life-cycle design, to look at efforts to green the supply chain, to encourage attention to materials productivity, and other new initiatives that may play key roles in the growth and redesign of TURA.

- DEP, as part of its efforts to consolidate regulatory reporting, will complete several department-wide activities regarding "One-Stop" reporting and will include toxics use reduction reporting in the project activity. Staff and teams will be designated for the project and a database will be developed using the Joint Applications Design (JAD) methodology. The new reporting system will be integrated into several DEP operations and the project activities will be coordinated with other agencies.

Refine the TUR List of Reportable Chemicals

- **TURI will seek the advice of the Science Advisory Board (SAB) on listing and delisting petitions and continue to support the SAB's TURA List Prioritization Project, an effort to develop a chemical categorization scheme for those chemicals on the TURA list. Working in conjunction with OTA and DEP, TURI will use this project to inform the efforts TURA Advisory Board and Administrative Council in the development of a prioritization scheme to better targeting TURA program resources and to design the next generation of TURA development.**

Prioritize Industry Sector Work

- **The TURA program has initiated a sector-by-sector research project to inform the Advisory Board on which business sectors would provide the greatest impact to the economy and the environment with aggressive implementation of P2. A report by Tellus Institute is due this fall and will guide program emphasis and define areas for potential program growth.**

- **TURI will compile a directory of Massachusetts manufacturers of clean products and technologies for the surface finishing and electronics sectors. This compendium will include equipment, chemical processes, and industrial products and will serve as an information resource for these sectors. Case studies and workshops will be held on the findings of these projects, as well as a publication of industries participating in "green" product marketing.**

- OTA will identify industry experts with responsibility for reviewing literature, establishing relationships and working with relevant trade groups, researching new technologies, identifying technology and research needs, and providing training for the rest of the staff in these areas.

- DEP will develop guidance for the implementation of TURA User Segment regulations beginning with an analysis of the user segment data in coordination with OTA and TURI. Following analysis of the data, DEP will coordinate with the Office of Technical Assistance, the Toxics Use Reduction Institute and other interested stakeholders to prepare guidance for the implementation of the user segment regulations, effective April 4, 1997. The process will begin in Winter, 1997.

- DEP will implement the Environmental Results Program (ERP) with several industry sectors and groups, including the dry cleaning, photoprocessing, sewer connections, combustion sources and printing industries. DEP, with continued assistance from TURI and OTA, will develop guidance assistance and outreach programs for these industries in different languages with an emphasis on pollution prevention and innovative technologies. To properly implement the program, DEP will develop compliance and enforcement strategies and database systems to store and use information from the companies. This ERP initiative will be supported by several DEP programs including TURA for consideration of appropriate toxics use reduction mechanisms, as well as inclusion and evaluation of pollution prevention.

- TURI will intensify its focus on garment cleaning by developing a resource document for water-based ("wet") cleaners on detergent alternatives and options for increasing water and energy efficiency. Staff will coordinate with and support on-going garment cleaning work with the Department of Environmental Protection's Environmental Results Program.

- OTA will conduct an internal analysis of the TURA data and EPCRA Tier II data, to identify users of extremely hazardous substances, to target technical assistance and outreach services.

- OTA will continue to work with and provide outreach to previously identified targets of solvent users and metal working operations. This effort will include development of workshops and tools (e.g. software programs) to address specific needs identified through field visits.

Increase the Effectiveness of Compliance and Enforcement Efforts

- Enforcement of the reporting and planning requirements will include review of the 1996 filing information and field inspections. Several new tools including a report check-in system and automated reporting compliance review system, will help us to identify and correct more deficiencies in reporting.

- DEP will target at least 1,000 facilities for multi-media inspections, including an initiative to target TURA filers that have a "high risk" of TURA violations based on Form S, Form R, and Plan Update Summary submittal. In addition, probable TURA filers who have not filed TURA reports and plans will also be targeted. All the 1,000 facilities inspected under DEP's multi-media inspections who are currently TURA filers will be inspected for compliance with reporting and planning requirements. All non-filers will be screened to determine if they need to file.

- DEP, in cooperation with its regional offices, shall prepare multi-media inspection and enforcement analysis and reports. This analysis shall utilize regional information and internal data evaluation systems to determine inspection and enforcement effectiveness. Collection of regional enforcement data will take place quarterly. Boston DEP TURA staff will evaluate enforcement targeting lists of facilities which have a poor enforcement history, whose characteristics indicate they may have been out of compliance under TURA, or other indicators of potential compliance problems.

- DEP will assess the feasibility of transferring some of Boston TURA enforcement to regional offices and develop a process where DEP Boston TURA staff will initiate enforcement actions by reviewing files, determining violations, notifying the appropriate regional office of the facility violation and recommended penalty, and track progress/settlement/referral status of each enforcement action. The regional office will issue the enforcement document and take the lead for either settlement or referral.

- DEP will collect TURA fees and work with the Bureau of Administrative Services, the Budget Office and regional offices to improve the system used in the collection of TURA fees. DEP will conduct an evaluation of existing fee and fee billing systems, make recommendations and implement feasible solutions.

- DEP staff will continue to comply with current DEP procedures for tracking enforcement actions and will determine the process for collecting and enforcing TURA fees. All enforcement records will be logged and filed for prompt and accurate retrieval.

- DEP TURA staff will continue to improve the accuracy and efficiency of both internal and external reporting of TURA enforcement actions. Enforcement files will be maintained and updated monthly.

- DEP will continue to investigate the need for and appropriateness of the development of policies or guidance in conformance with the Toxics Use Reduction Act, to allow companies to petition DEP for a temporary waiver of any law or regulation DEP administers if the company proposes to meet or exceed compliance through the use of a TUR technique or technology. Efforts will begin by seeking input and involvement from the regulated community, environmental interest organizations, citizens, professional associations and governmental bodies.

Improve the TURA Information System

- The TURA program will continue to use information gathered from the annual TURA data release and the TURA Program Evaluation to gage progress in toxics use reduction and to use this information as a basis for on-going program improvements and development. DEP will prepare for the 1996 TURA Information Analysis beginning in Fall, 1997. This will include data entry of the 1996 TURA Form S and federal Form R reports, incorporated data corrections (as a result of the "facility reports" referred to below), and analysis of the data. The 1996 TURA Data Release will be in a joint TURA program effort scheduled in January/February, 1998.

- **DEP will coordinate with EPA implementation of TRI/TURA programs including, but not limited to, the development of an electronic TRI/TURA filing system. This**

system would provide filers a program to work with their TRI electronic filing information, in order to allow easy, electronic one-stop type filing of TRI/TURA data. The DEP TURA program will include other bureaus and information system organizations within DEP to evaluate and develop an electronic based system for reporting TURA information and coordinate with EPA regarding the implementation of other elements of TRI and TURA.

- DEP will lead a program effort to continue to improve the quality and usability of DEP's TURA information systems. A working group which consists of representatives from DEP, TURI and OTA, will continue to focus on the improvement of the Department's information systems. Future enhancements and improvements planned for Fiscal Year 1998 will be implemented by DEP's MIS program.

- The DEP TURA program will work with the TUR Planners Association to make TURA reporting more meaningful by developing data systems which can more effectively communicate TUR success.

- **DEP, with TURI support, will initiate a new project which, through the utilization of "facility reports" sent to the TURA regulated community, will allow facilities the opportunity to correct any data inaccuracies which will then be incorporated into TURA information system. These reports will also allow facilities to better benchmark their TUR progress.**

- **In conjunction with its regional offices, community groups and other stakeholders, DEP will develop locally based reporting for the public that will provide specific information profiling a particular region's toxics chemicals and toxic chemical users. Local reporting will also be created by towns and sent to localities to allow cross-checking of TURA data with locally generated data. In addition, this data will be used to determine if there are facilities that should be filing under TURA.**

- DEP will expand and improve its handling of confidential (trade secret) information. New procedures have been implemented for the DEP handling of this confidential information. Training of these new procedures will be provided to TURA trade secret filers as well as DEP staff. A number of activities to maintain and improve the handling of trade secret information will be initiated. DEP will also develop and implement a plan to systematically review plan-related trade secret claims. The review will be followed with reports and decision documents.

- DEP will work with the DEP Bureau of Administrative Services, the DEP Budget Office, and regional offices to improve systems used in the collection of TURA fees. DEP will conduct an evaluation of existing fee and fee billing systems, make recommendations and implement feasible solutions.

Promote P2 as a Sound Business Strategy

- OTA will develop and the TURA program will routinely disseminate a simple and consistent message about the environmental, economic and competitive benefits of TUR, based on several evaluations, some years of data and many company case studies. OTA will develop and implement a coordinated outreach campaign based on this message.

- **OTA with support from TURI, will develop a program targeted at companies' upper management that clearly and easily identifies the potential business advantages that result from TUR efforts. Results from the Environmental Business Council report and TURA cases studies should be used as the basis for this effort.**

- **OTA will work with finance community, insurance industry and CPAs to educate them about the potential for using TUR as a factor in making business decisions. OTA will also work with Economic Affairs and Department of Revenue to get P2 technologies recognized as manufacturing technologies eligible for manufacturing equipment tax credits and to investigate the possibility of developing a low interest loan program to assist companies in P2 implementation.**

- OTA will continue efforts to evaluate effectiveness of its work with companies through follow-up visits to determine and quantify environmental, economic and competitiveness benefits, and will use this information in outreach programs.

- OTA will reevaluate and revise methods of measuring effectiveness of outreach activities, such as conferences and workshops.

- OTA will provide technical administrative support to the three Massachusetts companies that already have received NICE3 grants.

Promote the Private Development and Use of Cleaner Technologies, Processes and Products through Technical Assistance, Education, Research and Technology Transfer

- OTA will continue to provide on-site technical assistance at the request of companies and respond to requests for assistance stemming from regulatory referrals.

- **OTA, TURI and DEP staff will work with STEP to define a process to maximize the identification and transfer of cleaner technologies and products. The process will define policies and program wide efforts to seek out new technologies, to aggressively share information among and across industry sectors as well as state agencies, and to provide clear direction on how developers of new technologies can present their technologies for review and consideration.**

- TURI will utilize the successful merger of the Demonstration Sites and Matching Grants program to highlight new technologies and developments in five Massachusetts firms. Case studies, outreach, and site visits focused to promote learning and technology transfer will be a component of each project. Other target areas for research and information sharing will include; supply chain management, identification of Massachusetts companies manufacturing clean products and technologies, resource efficiency, Design

  for the Environment (DfE) and industry-focused programs in printed wiring board manufacturing, surface finishing and garment cleaning.

- TURI's Surface Cleaning Laboratory (SCL) will continue to test and evaluate aqueous cleaners and related equipment and aid companies in selecting process-specific aqueous cleaning systems. Last year the SCL provided services to 50 companies; plans this year are to service 60 companies. The lab will also continue to build upon the depth and availability of its cleaning chemistries database while developing and presenting workshops and case studies. This year the lab will expand its focus to address water and energy efficiency of aqueous surface cleaning systems. A separate Internet Web page has been established to provide access and outreach for the surface cleaning services, which now includes on-line registration for alternative cleaning requests.

- TURI's TUR Planner training efforts as discussed above, will focus heavily on cleaner production techniques, sector focused cleaner technologies, and other DfE areas.

- TURI's student summer InTURnship Program will be continued. During FY98 six student interns will be placed with participating firms. These interns will be matched with companies to work on TUR projects after attending a three-day training event. Follow-up reports will be completed by each intern.

- TURI's Technology Transfer Center (TTC) will continue to acquire, catalogue, and abstract literature on TUR and cleaner production in its database. During this past year the TTC provided information services to over 900 requests; during FY98 this is expected to increase by 35 percent. Services such as the research library, pollution prevention clearing house, literature search service, and the Institute's information booth will continue to build upon past successes with an emphasis on increased visibility, environmental management systems, and the systems approach for environmental policy and cleaner technologies.

- **TURI will continue its support for industrial initiatives in Design for the Environment and will commence work on clean products through the development of supply chain management activities.**

- As mentioned above in conjunction with industry sector initiatives , TURI will compile a directory of Massachusetts manufacturers of clean products and technologies for the surface finishing and electronics sectors. This compendium will include equipment, chemical processes, and industrial products and will serve as an information resource for these sectors. Case studies and workshops will be held on the findings of these projects, as well as a publication of industries participating in "green" product marketing.

- TURI's TTC will continue to advertise and make available copies of the over 55 Institute publications and fact sheets that are frequently requested by professionals, students, and government agencies.

- TURI will transform its Research Fellowship sponsorship through a collaboration with the STEP program to incorporate TUR and sustainability into a University Research Program on Sustainable Technologies. TURI plans to award five grants to University of Massachusetts faculty and students to work on technologies identified through the TURA and STEP programs and faculty consultations. The work of these projects will be presented and published by TURI.

- **TURI will work with STEP staff in identifying and promoting "captured technologies", i.e. P2 technologies developed by companies for in-house use which may have broader commercial application.**

- OTA will continue to oversee development and submission of NICE3 grant proposals from Massachusetts companies, including working with Division of Energy Resources to screen potential candidates for technical feasibility and merits.

- OTA will continue to provide support for the STEP program through participation in the working group and participation in the STEP/MWRA project evaluating mercury removal technologies.

- OTA will support STEP/NETI by providing technical review of proposed projects and develop research projects and proposal for submission to TURI and NETI.

- OTA will promote technology transfer through workshops, conferences, breakfast meetings, etc. as well as publications.

- **OTA will work with TURI and DEP to hold one-day conference for staff and TUR planners to highlight DfE and P2 technologies and products.**

- OTA will plan and hold an event for the transfer of a NICE3 technology piloted by Erving Paper Company. The audience will be 25 paper mills in Massachusetts and we will attempt to coordinate with the National Coalition for Air and Stream Improvement, the environmental arm of the paper industry.

- DEP will continue to work with its Innovative Technology staff and the Strategic Technology Environmental Partnership through technology review, participation in educational programs, and integration of pollution prevention and innovative technology issues into DEP activities. The DEP TURA program will also provide review of technology proposals to determine pollution prevention applicability and regulatory barriers and support.

Expand P2 Partnerships

- TURI will continue to participate in partnerships and projects with the Northeast Business Environment Network (NBEN), the Massachusetts Manufacturing Partnership (MMP), the Pollution Prevention Consortium of New England Universities, the National Pollution Prevention Roundtable, the Northeast Waste Management Officials Association, and the TUR Planner Association. The staff will explore relations with NESCAUM and NEWIPIC.

- TURI will continue its involvement in the EPA's Common Sense Initiative, and the National Institute for Science and Technology Pollution Prevention Training Program.

- OTA will continue its involvement in EPA's Common Sense Initiative, with the regional and national P2 roundtables, and with NEWMOA and other regional environmental media association projects.

- OTA will establish additional relationships with entities whose policies and practices impact chemical users. These include other organizations that assist businesses such as the Massachusetts Manufacturing Partnership, to whom OTA is providing environmental assistance. Emphasis will be placed on finding partners to develop new policies and practices concerning access to finances, accounting, and insurance. OTA will seek to further develop its partnerships with MOBD, SBDC, Wastecap, and others. OTA will continue to provide information to the business community on resources available to businesses.

- OTA will continue to work with external authorities (EPA, POTWs, AG's Office, local entities) to determine how best to incorporate TUR into regulatory actions, resulting in increased referrals for technical assistance.

- DEP will continue to coordinate with EPA on Toxics Release Inventory expansion, toxic chemical information management systems, Toxics Substances Control Act information expansion, enforcement coordination projects, pollution prevention initiatives, state-level Community Right To Know activities, and other toxic use reduction, pollution prevention and waste management activities.

- DEP will continue to support EPA's Project XL, The Environmental Leadership Program, and the Common Sense Initiative. DEP will continue seeking regulatory flexibility and authority from US EPA regarding new initiatives and improvements in pollution prevention. The DEP TURA program will continue to provide pollution prevention and technical support for these efforts. DEP TURA will review these activities, support these activities, and work with EPA to determine other initiatives requiring state agency support.

Strengthen Key Partnership with TUR Planners

- TUR Planners are key to the success of TUR. Program efforts are underway to strengthen the partnership between the program and planners, including the initiatives mentioned above to streamline paperwork, rethink planning and improve the database.

- TURI will offer the 48-hour TUR Planner course twice in FY 98. Cleaner production techniques will be incorporated into the format. The current continuing education program will be expanded to offer one three or six credit learning event per month. Areas to be covered include DfE, a curricula for small companies for their in-house training, workshops for upper managers, Internet information retrieval, sustainable practices in the workplace, sector-focused cleaner technologies, and areas identified by the Department of Environmental Protection's plan inspections. A special emphasis will be placed on the needs of limited practice planners. In addition, results from evaluations conducted at the Spring 1997 TUR Planner Continuing Education Course will be reviewed to determine which of the 25 workshops presented there will be updated and delivered as part of the continuing education program for planners.

- DEP will meet monthly with TUR Planners to ensure an understanding of TUR regulatory requirements and current policy initiatives. These meetings will also provide a forum for TUR Planners to bring issues of concern to the DEP for discussion and resolution.

- DEP will also continue to review, evaluate and approve certification and re-certifications of TUR Planners, both Limited Practice Planners and General Practice Planners, and respond appropriately to their questions and concerns. This will be accomplished through regular meetings of stakeholders throughout the year. This group will coordinate changes to continuing education unit credits, training, planner disciplinary procedures and certification activity.

- DEP will schedule a Toxics Use Reduction Planner examination for the spring of 1998.

- **DEP will prepare, in coordination with its regional offices, to implement TUR Planner Disciplinary Procedures to improve consistency and provide additional support to regional compliance and enforcement personnel.**

- DEP will be updating the TUR Planner Course Directory with information on new courses and activities as part of each TUR Planner's recertification process.

- DEP is working closely with the Toxics Use Reduction Institute, the Office of Technical Assistance and the TUR Planners Association to provide TUR Planners with the most up-to-date information regarding the program. This will include coordination with DEP's regional office staff to improve and provide more support and information to the TUR Planners, as well as build upon existing program educational activities.

- **DEP will work with OTA, TURI and the TUR Planners to investigate opportunities for TUR Planners to receive CEU credits or fee reductions in exchange for donating their time to assist communities and non-profit associations with P2 outreach and implementation.**

Broaden the Understanding of TUR within Public Education and Among the General Public

- TURI's Toxics Use Reduction Network Grants Program (TURN) will enter its third year and continue to target community groups and municipal officials to promote TUR literacy and partnering through the award of six projects. The integration of industrial and community issues and projects will be explored.

- OTA will continue its efforts to incorporate TUR concepts into the Massachusetts Watershed Initiative through participation on the agency coordinating group, the statewide steering committee, and every watershed team, and chairmanship on one team. OTA will share its experience of working with industry, POTWs and consumer education programs to help the various teams and the overall effort understand the crucial role of TUR in environmental protection on a watershed basis.

- **TURI will begin a Sustainable Community Project with a conference for TURN grantees, local government officials, and industrial representatives for a coordinated look into sustainability issues and practices. This will be coordinated with state EOEA Growth Management and Watershed initiatives.**

- DEP will work with various stakeholders to initiate and develop procedures for responding to citizen petitions requesting DEP review of a facility's TURA Plan, and issuing findings.

- TURI will continue its participation in the Pollution Prevention Consortium of New England Universities and the Cleaner Production and Pollution Prevention concentration in the University of Massachusetts Department of Work Environment. The graduate level courses in Cleaner Production and TUR will continue.

- TURI will conduct an assessment on vocational teacher continuing education workshop criteria to develop pollution prevention for the faculty of vocational schools. A focus group will be held to research the methods and requirements needed to create a pollution prevention component for all vocational students regardless of their “shop” enrollment. This effort will continue to assist and support Cape Cod Community College's environmental internship program.

- OTA, DEP and TURI will develop a coordinated campaign of public events, articles, etc. touting the success of Massachusetts’ Industry during National Pollution Prevention Week, Sept. 15-21, highlighting the ties between P2 and economic development and strategic business advantages.

- DEP will submit an annual report to the Massachusetts State Legislature regarding progress of mandates established for DEP by the Toxics Use Reduction Act.

- TURI, OTA and DEP will continue to maintain and upgrade their Internet Web pages. DEP ‘s TURA "Home Page" on the World Wide Web will ensure that all TURA information is available electronically through the Internet. Expected improvements include the availability of facility and chemical information, regulatory information, educational information, and links to other toxics/pollution prevention information.

Expand the Foundation for Pollution Prevention within EOEA Agencies

- TURI will continue to work with the Massachusetts Department of Environmental Protection (DEP) and Northeast Waste Management Officials Organization on a federal Environmental Protection Agency (EPA) “Environmental Technology Initiative Project” to develop and pilot a training curriculum targeting environmental regulatory staff competencies for incorporating pollution prevention and Cleaner Technology alternatives into environmental regulatory actions. The training pilot is underway and is focused on the Massachusetts DEP. This year, the developed material will include cross-media training, process sector (industry specific) modules, pollution prevention in permitting, enhanced communications, and data access and analysis. These materials will be published for future training applications.

- DEP, in cooperation with OTA and TURI, will join other media program staff within the Bureau of Waste Prevention to cross train DEP personnel. Along with hazardous waste, industrial wastewater, solid waste, air quality and auto inspection and maintenance, DEP TURA staff will continue to develop training modules and participate in providing cross training to Bureau staff.

- DEP will continue to implement an organizational realignment with emphasis on programs to provide cross-media services within the Bureau of Waste Prevention

(BWP) and improved pollution prevention. The realignment will be designed to improve accountability, increase emphasis on measuring success, establish integrated priority setting, emphasize compliance and enforcement, and improve management decision making. This will include a restructuring of the Bureau of Waste Prevention and the DEP TURA program and the creation of a BWP strategic plan for the development, implementation and analysis of TUR (P2) integration throughout various Bureaus of the DEP. This will involve the development of Bureau specific plans that include: identification of specific projects; develop integration goals and project goals; activity schedules and milestones; performance indicators and resourcing plans.

- **DEP will finalize the TURA Enforcement Guidance (TEG). This guidance document will explain TURA enforcement policies. The TEG is organized to help foster a better understanding of the relationship between enforcement, the TURA planning and reporting requirements, and pollution prevention. DEP, in cooperation with OTA, will train regional staff on the TEG.**

- **DEP will form an internal task force to look at wastewater programs and solid waste programs to determine appropriate strategies, and develop plans for implementation of future TURA initiatives. In addition to DEP programs, other state and federal agencies will be involved in these discussions.**

- DEP will continue to coordinate with regional and Boston enforcement staff to ensure that pollution prevention is incorporated throughout compliance and enforcement. OTA will continue to offer its assistance in incorporating pollution prevention into rules and policies, including ERP. This work will be of particular importance concerning smaller pollution sources for whom the full measure of conventional regulations is not currently effective or applicable.

- DEP will continue to work with EPA on pollution prevention initiatives and participate in promoting pollution prevention in EPA activities involving DEP. The Performance Partnership Grant with EPA will include TURA performance evaluation, TURA enforcement, including the new TURA Enforcement Guidance (TEG), and pollution prevention activities. DEP will work with US EPA and DEP regional offices to develop and integrate P2 measures of success in program activities and the performance partnership agreement.

- CMR Review is an administrative initiative to better promulgate regulations through the use of cost benefit analysis and Executive Office for Administration and Finance review. DEP will provide support for this effort to assist other organizations with integration of pollution prevention.

- The Technology Transfer Center at TURI will offer special programs to promote better use of the library by Department of Environmental Protection and Office of Technical Assistance staff.

- With the cooperation of TURI and OTA, DEP will provide ongoing TURA training to regional office inspectors. The training is designed to develop a better understanding of the TURA program regulations and improve inspector proficiency in TUR compliance assurance.

- The TURA program will continue to develop the professional capabilities of the TURA staff. TURA program staff will attend cross agency training sessions and individual plans for development will be developed with each employee.

Expand the P2 Challenge

- **TURA program staff will work with EOEA to promote the development of environmental management systems within state agencies, systems which seek to motivate reductions in total environmental impact.**

- **With MWRA, DEP and EPA, OTA will develop and present a major conference on pollution prevention opportunities for the medical community based on ongoing collaborative work by these agencies. This efforts will highlight mercury as a source of contamination.**

- **OTA will develop training programs for nonreporting and nonindustrial sources. Training program development will identify not only drivers for participation but also key players who can sponsor and/or endorse the message (i.e. trade/professional associations, boards of health and health agents, local emergency planning councils (LEPCs)). Work has already begun and will be continued with hospitals, schools, auto body shops, dry cleaners, municipal DPWs and LEPCs. (With the expectation of hospitals, all of these projects were or will be undertaken with grant funding from the US EPA).**

- **OTA will work with EPA New England to develop and present a series of workshops across the Commonwealth on "One Plan," the new federal program for integrated contingency planning. Coordinate these efforts with DEP efforts in this area. With OTA and DEP involvement, there will be an opportunity to present TUR strategies in conjunction with emergency planning.**

- OTA will provide outreach to state agencies about OTA's services and provide on-site assistance at state facilities when requested.

- OTA will continue to work with the EOEA Clean State Coordinator to plan outreach for state agencies on P2 reporting and planning.

- OTA, TURI and DEP will continue to work closely with EOEA, STEP and the Division of General Services concerning the development of policies for purchasing environmentally preferable products. Efforts will include assisting state agencies in the development of state purchasing specifications and the identification and development of incentives for purchasing environmentally preferred products .

- DEP will continue to provide support in the implementation of environmental programs for state agencies. DEP will support the Clean States Initiative through regulatory direction, compliance assistance, and P2 information. DEP TURA staff will work with other DEP programs to promote environmentally preferred projects (EPPs).

- The DEP TURA program is the state coordination arm of the US EPA SARA 311 and 312 filings of Tier II (storage of listed substances generally over 10,000 pounds on-site). While these are annual filings, the program receives Tier II information requests throughout the year. DEP will continue to provide support, review future support needs, and work with MEMA, LEPC's and MA DPH on coordination of these efforts.

- DEP will continue to provide leadership in the development of regulatory standards and strategic policies regarding the power utilities industry. The DEP TURA program staff will support this effort through pollution prevention ideas and toxics use reduction information for this industry.

TURA FUND EXPENDITURES

The following information documents all revenues collected into and expended from the Massachusetts Toxics Use Reduction Fund (Fund 149) from Fiscal Year 1991 to Fiscal Year 1997.

Overview

The Toxics Use Reduction Act mandates that between $4.5 and $5 million be collected each year in industry fees to support the implementation of the Act, including the provision of TURA services. The TURA fee structure was established by Council regulation in FY 90 and remains unchanged. Each year, a handful of companies apply for and are granted fee waivers by the Secretary of Environmental Affairs in response to documented claims of financial hardship.

In Fiscal Year 1997, the three TURA agencies were fully funded and fully operational. Revenues collected in FY 97 were significantly lower than projected due in large part to an extension granted for calendar year 1996 TURA filing and fee payments which delayed the collection of calendar year 1996 TURA fees until September 1997 (FY 98). Consequently, FY 98 revenues are expected to be high. Revenues collected from FY 95 to FY 97 average approximately $4.2 million annually, a figure which reflects the slowly decreasing number of TURA filers as more companies succeed in reducing their chemical use below thresholds.

ATTACHMENT A

TOTAL AMOUNTS EXPENDED		TOTAL REVENUES AVAILABLE	
FY'90	n/a	FY'90	448,463
FY'91	875,222	FY'91	2,049,163
FY'92	3,002,363	FY'92	4,757,499
FY'93	3,425,533	FY'93	4,813,679
FY'94 (a)	6,271,230	FY'94	4,505,000
FY'95	6,689,551	FY'95	5,552,000
FY'96	5,662,592	FY'96	2,781,000
FY'97	5,303,133	FY'97	4,342,000
FY'98 est.	4,623,765	FY'98 est.	6,510,000
TOTAL	**35,853,389**	**TOTAL**	**35,310,341**

(a) Total amounts expended include the following: 10% of the costs of the 21E program (FY'94 and FY'95); fringe benefits (FY'94 and FY'95); and the Cape Cod Community College Program (FY'95)

	FY'91	FY'92	FY'93	FY'94 (c)	FY'95 . (b)	FY'96	FY'97
STARTING BALANCE	448,463 (a)	1,622,404	3,500,000 (c)	4,889,000	3,122,770	1,987,000	(894,592)
FY REVENUES	2,049,163	4,757,499	4,813,679	4,505,000	5,552,000	2,781,000	4,342,000
TOTAL AVAILABLE	2,497,626	6,379,903	8,313,679	9,394,000	8,674,770	4,768,000	3,447,408
Direct Expenses							
OTA	255,882	1,215,717	1,232,522	1,492,702	1,642,700	1,730,492	1,716,231
DEP	222,746	624,307	519,925	815,439	964,027	910,799	999,635
TURI	339,090	983,520	1,303,219	1,401,000	1,387,295	1,739,301	1,705,830
10% of 21E	n/a	n/a	n/a	1,426,089 (b)	1,456,529 (b)	0	0
Cape Cod CC (7504-0101)	n/a	n/a	n/a	n/a	125,000	125,000	114,438
Subtotal	817,718	2,823,544	3,055,666	5,135,230	5,575,551	4,505,592	4,536,133
Indirect Expenses							
Fringe	57,504	178,819	369,867	1,134,000 *	1,114,000 *	1,157,000	767,000
Medicare tax				2,000			
Subtotal	57,504	178,819	369,867	1,136,000	1,114,000	1,157,000	767,000
TOTAL EXPENDITURES	875,222	3,002,363	3,425,533	6,271,230	6,689,551	5,662,592	5,303,133
ENDING BALANCE	1,622,404	3,377,540	4,888,146	3,122,770	1,985,219	(894,592)	(1,855,725)
(total available - total expended)							

NOTES

* FY94 Based on AA expenditures: OTA 1,087,597; DEP 714,267; 10% of 21E 1,152,357

(a) Revenue collected in FY'90, the first year of the legislation

(b) 10% of the costs of the 21E prgrm charged to the TURA fund in FY'94 and FY'95 FRINGE RATES: FY91-34.01%; FY92, FY93--27.83%, FY94--33.37%;FY95--31.97% (by law, a % of the amt spent on personnel is charged to any dedicated fund (MGLC 29, s. 5D)

(c) Based on Comptroller's preliminary FY'94 CAFR

ATTACHMENT C **EXPENDITURES**

TOXIC USE REDUCTION FUND (FUND NUMBER 149)

Sub	Description	FY'91			FY'92			FY'93			FY'94			FY'95		
		OTA 2020-0100	DEP 2210-0100	TURI 7220-0004	OTA 2020-0100	DEP 2210-0100	TURI 7220-0004	OTA 2020-0100	DEP 2210-0100	TURI 7220-0004	OTA 2020-0100	DEP 2210-0100	TURI 7220-0004	OTA 2020-0100	DEP 2210-0100	TURI 7220-0004
	APPROPRIATION	*350,000*	*475,000*	*450,000*	*1,300,000*	*627,711*	*1,082,289*	*1,479,205*	*763,856*	*1,466,137*	*1,829,313*	*953,897*	*1,466,137*	*1,850,323*	*1,005,734*	*1,464,290*
00	*All Expenditures*															
AA	*Regular Emp. Comp.*	119,307	53,319	114,634	384,113	310,160	327,433	659,574	440,169	282,900	1,087,597	714,267	366,683	1,139,989	802,070	431,656
BB	*Emp. related exp (meals, memberships, conferences,etc)*	5,463		5,448	33,468	147	15,746	22,085	12,520	20,647	35,088	7,924	29,065	36,467	3,081	45,410
CC	*Spec. Emps.(interns, seasonals, bd mbrs)*			30,736	143,804		91,138	88,593	0	85,697	51,499		102,222	68,669	0	80,574
DD	*Chargebacks*	2,221			4,656		75,427	5,723	0	5,065	24,565		4,124	22,206	13,427	5,257
EE	*Admin. Expenses (supplies, postage, phones, ads)*	30,960		18,690	115,678		77,494	98,710	8,713	94,613	136,522	10,418	180,402	120,989	29,150	198,544
FF	*Facility Operations*						24,449	3,735	0	66,292			24,271	0	0	22,703
GG	*Space rentals and related expenses*			127,160	4,818		103,172	759	0		3,055			4,968	72,456	0
HH	*Consultants*	61,336	157,500	14,416	209,902	314,000	130,675	257,395	46,197	467,622	123,622	19,923	587,164	126,409	19,253	474,079
JJ	*Operational services (janitors, HW, snow, rubbish removal)*		11,927	0	3,675		1,279	988	2,333	89,639	3,853	8,000	103,794	300	22,498	71,899
KK	*Equipment*	34,468		28,006	307,630		136,029	69,243	9,994	156,921	23,098	54,907	26,496	118,642	2,092	45,677
LL	*Eqpmt leases*	2,127			7,973		678	25,715	0	4,333	3,803		2,331	4,061	0	5,889
MM	*Purchase Service*									29,490			18,688			5,607
RR	*Benefit Programs*															
	EXPENDITURES	*255,882*	*222,746*	*339,090*	*1,215,717*	*624,307*	*983,520*	*1,232,522*	*519,925*	*1,303,219*	*1,492,702*	*815,439*	*1,445,240*	*1,642,700 (a)*	*964,027*	*1,387,295*

TOXIC USE REDUCTION FU

Sub	Description	FY'96			FY'97		
		OTA 2020-0100	DEP 2210-0100	TURI 7220-0004	OTA 2020-0100	DEP 2210-0100	TURI 7220-0004
	APPROPRIATION	*1,830,882*	*1,000,332*	*1,763,114*	*1,849,860*	*1,009,427*	*1,763,114*
00	All Expenditures						
AA	Regular Emp. Comp.	1,207,582	767,404	507,644	1,250,149	799,697	570,332
BB	Emp. related exp (meals, memberships, conferences,etc)	40,687	2,500	41,642	37,601	2,285	43,872
CC	Spec. Emps.(interns, seasonals, bd mbrs)	83,244	0	118,406	87,454	0	83,172
DD	Chargebacks	27,419	14,383	6,736	22,395	15,357	7,933
EE	Admin. Expenses (supplies, postage, phones, ads)	134,276	13,119	156,251	99,013	31,958	246,733
FF	Facility Operations	0	0	14,137	0	0	23,621
GG	Space rentals and related expenses	0	77,323		0	77,323	0
HH	Consultants	188,150	0	676,921	185,657	20,993	560,439
JJ	Operational services (janitors, HW, snow, rubbish removal)	0	36,070	135,398	395	49,691	96,680
KK	Equipment	37,861	0	66,476	23,360	0	63,945
LL	Eqpmt leases	11,273	0	4,472	10,207	2,330	3,493
MM	Purchase Service						
RR	Benefit Programs			11,217			5,610
	EXPENDITURES	*1,730,492*	*910,799*	*1,739,300*	*1,716,231*	*999,635*	*1,705,830*

OTA STAFF - FY 97

Cynthia Barakatt	Environmental Analyst IV
Rich Bizzozero	Environmental Engineer IV
Alan Buckley	Environmental Engineer IV
Jim Cain	Environmental Analyst III
Kelley Cronin	Environmental Analyst III
Lisa Dufresne	Environmental Analyst III
John Flynn	Environmental Analyst III
Scott Fortier	Environmental Engineer IV
George Frantz	Environmental Analyst IV
Teresa Freyer	Administrative Assistant II
Arthur Gamache	Environmental Engineer III
Marina Gayl	Environmental Engineer
Tracey Gilroy	Intern Engineer
Bill Griffin	Environmental Engineer IV
Jennifer Hunt	Environmental Analyst II
Azin Kavian	Environmental Engineer II
Barbara Kelley	Director, OTA
Ariadne Kuczwaj	Intern Engineer
John Laplante	Environmental Engineer II
Sue Lanza	Program Coordinator III
Susan Leite	Intern Engineer
Christopher MacIsaac	Administrative Assistant I
Bill McGowan	Environmental Engineer V
Frances Merenda	Intern Engineer
Phil Milmoe	Systems Analyst II
Hazrat Noorzad	Environmental Analyst II
Grace Offen	Program Coordinator II
Augustus Ogunbameru	Environmental Analyst III
Joe Paluzzi	Environmental Engineer III
Nikhil Panse	Intern Engineer
John Raschko	Environmental Engineer IV
Rick Reibstein	Environmental Engineer V
Ken Soltys	Environmental Engineer IV
Lara Sutherland	Environmental Analyst III
Heather Tenney	Intern Engineer
Audrey Tyler-Casey	Program Coordinator II
Craig Witzke	Intern Engineer
Paul Richard	Environmental Engineer IV, STEP
Gina McCarthy	Director, Administrative Council
Martin Suuberg	General Counsel, EOEA
Carol Lee Rawn	General Counsel, EOEA

THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP)
TURA-RELATED STAFF

NAME	TITLE	PROGRAM	FUNCTION
Funded by TURA Funds			
Roberta Baker	EA IV	Region	Western - TURA Integration/Inspections
Anita Baltzersen	EA IV	Region	Central - TURA Integration/Inspections
Lynn Cain	EA IV	TUR Boston	TURA Policy and Information Analysis
Martha Caldwell	EA III	Region	Central - TURA Integration/Inspections
Cynthia Chaves	RP IV	TUR Boston	TURA Branch Chief
Steve Edelheit	RP IV	BWP	Training Coordinator
Doug Fine	RP V	BWP	Deputy Assistant Commissioner
Walter Hope	RP II	TUR Boston	Program Administration
Sandra Hurlbut	EA IV	BWSC	Environmental Analyst
Tracy Klay	RP III	TUR Boston	TURA Planner Certifications/Enforcement
Geri Lambert	EA V	Enforcement	Training, Penalty Collection & Tracking
Bill McGovern	SA III	MIS	TURA/FMF/Business Objects Programmer
Carl Natho	EA IV	Region	Southeast - TURA Integration/Inspections
Susan Peck	EA VI	TUR Boston	Senior Policy Analyst
Ken Pelletier	RP II	TUR Boston	TRI Coordinator/Pollution Prevention Planning
Gene Romero	EA IV	BWP	Leave of Absence
Paul Walsh	RP III	TUR Boston	TURA Regional Coordination
Edward Weatherhead	RP II	TUR Boston	TURA Information Systems
Alissa Whiteman	Counsel II	Legal	TURA Program Attorney
Funded by Other Funds			
Carl Dierker	PM IX	BWP	Assistant Commissioner
Thomas Hughes	RP IV	BWP	Policy Analysis
Barbara Kwetz	PM VIII	BWP	Division Director
William Panos	PM VII	BWP	Deputy Division Director

Other Staff, Funded with TURA Funds

Temp Staff 2-5 as needed.

TOXICS USE REDUCTION INSTITUTE STAFF

FISCAL YEAR 1997

Ken Geiser	Director
Michael Ellenbecker	Associate Director for Research
Jack Luskin	Associate Director for Education and Training
Beverly Johnson	Associate Director for Administration
Steve Greska	Training Associate
Jody Hensley	Training Associate
Anne Basanese	Special Events Coordinator
Elizabeth Harriman	Research Associate
Monica Becker	Research Associate
Jodie Siegel	Research Associate
Karen Thomas	Technology Specialist
Carol LaBlanc	Surface Cleaning Laboratory Coordinator
Jay Jankaukis	Laboratory Assistant
Janet Clark	Technology Transfer Coordinator
John Beardsly	Librarian
Diane Barrus	Technology Transfer Center Assistant
Robin Smith	Secretary
Evelyn Whiting	Receptionist
Kathy Grinnel	Bookkeeper
Janette Schley	Administrative Assistant
Pat Gittis	Public Outreach Specialist

TURA - THE NEXT GENERATION

Interim Report of the
Toxics Use Reduction Advisory Board

May 13, 1997

TURA - The Next Generation

Executive Summary

The Toxics Use Reduction Advisory Board is a legislatively created group of stakeholders which provides guidance on the implementation of the state's Toxics Use Reduction Act (TURA). The Board meets periodically to review the activities and to advise each of the program entities: the Office of Technical Assistance (OTA), the Toxics Use Reduction Institute (TURI), the TURA Office within the Department of Environmental Protection (DEP), the Administrative Council on Toxics Use Reduction (TUR) and the TUR Science Advisory Board. In addition, the Board annually administers the Governor's Award for TUR.

In October, 1996, the Advisory Board began monthly meetings to talk about the future direction for growth of the TURA program. These focused discussions were prompted by a number of factors, most notably the fact that the program is now mature. Fiscal year 1996 marked the beginning of the seventh year of the TUR program in Massachusetts, the fifth year of industry reporting under TURA, and the third year of full staffing for OTA, TURI and DEP. At this point the program has gathered much data and many lessons have been learned. The Board decided that it was time to step back from day to day operations and take a look at where the program is and where they hope it will grow.

This interim report briefly summarizes the discussions of these stakeholders on future directions for TURA. While a final report is not anticipated until the fall of 1997 pending the completion of an industry sector-by-sector research project, the Board's discussions have already identified a number of key features of a plan to prioritize and target future TURA program resources:

- The expansion of TURA's focus beyond reductions in toxics use and hazardous waste generation, to promote reductions in water and energy use, solid waste, and other environmental and public health impact areas where economic saving can be found;
- The expansion of TURA to service additional universes where opportunities to reduce environmental impacts and to increase economic competitiveness can be found, such as small companies, hospitals, universities, state agencies, and municipalities; and
- The resolution of shortcomings in existing TURA services that have been raised by TUR Planners and industry, including paperwork streamlining, the provision of rewards for TUR success (most notably fee reductions), and increased integration of P2 into compliance and enforcement efforts.

For additional information, please call Gina McCarthy at the Executive Office of Environmental Affairs (617) 727-9800 ext.214. All meetings of the TUR Advisory Board are posted and open to the public in accordance with the requirements of the Massachusetts Open Meeting Law. Minutes of all Advisory Board meetings are available upon request.

Advisory Board Participants

The following members, designees and invitees attended and participated to varying degrees in "TURA - The Next Generation" discussions: Madelyn Morris (Attorney General's Office), Kevin McManus (MWRA), Paul Burns (Mass PIRG) for Hillel Grey, Bob Chatel (The Robbins Company), Tim Hawes (Polaroid), Dick Herring and Larry Boise (Gloucester Company), Gary Siegel (TUR Planner), Bill Judd (TUR Planners Association), Jeff Heroux (OMI) and John O'Hare (representing POTW's), Kathy Hearn (Boston Gas), Gretchen Latowsky (JSI), Bob Eisengrein (JSI), Gail Minton (JSI), Paul Abooty and Nancy Comeau (Occupational Hygiene), Joel Pointon (JRP Consulting Services), Jim Gomes (ELM for Sue Swedis), Ron Parlow (EnviroManagement), Hank Nowick (TURPA), Keith McCoy (AIM), Andrew Brengle (EnviroManagement), Steve Venezia (DED), and Mike DeVito (MCTA).

The following TURA staff were in attendance to support the Board discussions: Jody Hensley (TURI), Gina McCarthy (EOEA), Ken Geiser (TURI), Barbara Kelley (OTA), Rick Reibstein (OTA), Rich Bizzozero (OTA), Bill McGowan (OTA), Bill Panos (DEP), Lynn Heisey (DEP), and Steve McKenna (DEP).

TURA Strengths/Weaknesses

To identify potential areas for the future growth of TURA, the Board began with an extensive discussion to identify the key strengths of the act, successful program resources and services, as well as potential areas for improvement and expansion.

The key strengths of the statute include the multi-sector input and support that led to its passage; its equal focus on environmental and economic goals, and the value of reporting and planning requirements as both tools for better management and incentives for reductions. The most successful services and resources identified included the technical assistance provided by OTA, TURI's education and training, DEP's initiation of multi-media, pollution prevention (P2) biased enforcement, and the efforts of the TUR Planners - a comprehensive array of services designed to initiate behavior changes in industry, regulators and the general public. In sum, the Board viewed TURA's goals, resources and services as a well designed vision that helped create a partnership between industry, government, academia and the public that benefits all stakeholders. The identified areas for improvement in existing services fell within the general categories of paperwork streamlining, the need to provide rewards (fee/paperwork reductions) for TUR successful companies, increased integration of P2 into all compliance and enforcement activities, and quick fixes (areas where TUR Planners see TURA as limited in its potential impact).

The Board sought ways in which the TURA program could expand its work and the incentives/services it provides to industry to look beyond reductions in toxics use and hazardous waste generation, to what they called "Total Environmental Impacts", a term which includes TUR as well as other areas of impacts such as water use, energy (fuel and electrical) consumption, raw material consumption, air emissions, wastewater volume, solid waste generation (discarded and recycled), packaging, etc. In addition, the Board sought ways in which the program could better motivate and challenge small businesses as well as non-industrial sources, and encourage and assist voluntary initiatives to promote sound economic growth - i.e. Design for the Environment (DfE), ISO 14000, financial assistance for P2 improvements, state purchasing of environmentally preferred products, promoting technology advances, etc.

TURA Goals/ Universe/ Services/Incentives/Resources - Now and Future

The Board reviewed the existing goals of the statute, the universe of filers (SIC's, chemicals, thresholds), the services provided by the program entities, the act's positive (carrots) and negative (sticks) incentives, and the existing level of resources supported through company fees. The Board then began the task of looking ahead. What should the program strive to look like in five years and how do we get there? The following are highlights of Board discussions thus far:

TURA Goals - Future

The Board reviewed the six goals of the statute and, after much discussion, redefined those goals as follows to guide future program efforts:

- Eliminate unnecessary chemical use while increasing the competitiveness of Massachusetts' businesses and encouraging new enterprise.
- Increase the efficiency of needed chemicals.
- Seek mechanisms to promote "greener" (less toxic) processes and products.
- Seek alternatives to product design and manufacturing processes to reduce the most toxic chemical consumption and total environmental and public health impact (Design for the Environment approach).

TURA Universe (SIC's/Thresholds/Chemicals) - Future

The Board determined that in addition to the industries already regulated under TURA, small companies, hospitals, universities, state agencies, municipalities and the general public could benefit from TURA services and the behavior changes that result from the incorporation of TUR into everyday operations and thinking. The Board also reiterated its support for the on-going efforts of the SAB to review listing and delisting petitions and to look at ranking the list of TUR substances to assist filers in choosing lower toxic alternatives.

A proposal was discussed to encourage companies currently filing under TURA which had successfully met TURA goals, to expand their planning efforts to look for opportunities to reduce "total environmental impact". Much interest was generated in terms of expanding the role of TUR Planners and increasing the overall environmental and economic effectiveness of TUR services. The Board noted that a number of incentives should be investigated to encourage participation by companies in such programs (such as relaxed reporting requirements, financial assistance, recognitions, etc.), as well as the amount of resources needed to expand training, education and technical assistance.

TURA Services/Incentives/Resources - Future

While the Board did determine that expansion of TURA would be beneficial environmentally and economically to the Commonwealth and the involved universe, it stressed that differing types and levels of services, incentives and resources would likely be needed and appropriate for each new universe, depending on the size and nature of the company, institution or consumer group. The Board did not endorse a "one-size-fits-all" approach. In addition, the Board was continuously aware of the need to consider the amount and source of funding needed for any TURA expansion.

TURA Fees - New Ways to Reward TUR Success and to Expand Public/Private Partnerships

The Board began to discuss a number of potential options for revising the existing fee structure and/or revising existing fee policies relative to TUR filers and TUR Planners, which would continue to support the program services and resources while more effectively rewarding TUR success, promoting information sharing and technology transfer, and building and strengthening public/private partnerships - the cornerstone of TURA. For example, the Board encouraged the program to consider allowing TUR Planners to receive continuing education credits in exchange for volunteer TUR education or technical assistance efforts at the community level. Similar mechanisms to encourage industry-to-industry and industry-to-community mentoring were also identified as possible strategies to forge new alliances while rewarding companies which have successfully reduced their use of toxics and generation of toxic byproduct. While the act provided a fee schedule which specifically rewarded reductions in use below reporting thresholds, many TUR successful companies, because of their size and product lines, cannot reasonably and economically reduce their use of toxics below threshold amounts. For these companies, fees remain unchanged regardless of TUR progress. Finding creative ways to reduce fees as a reward for TUR progress was seen by the Board as a sound short-term goal and a necessary consideration in any future expansion of TURA. Efforts to strengthen and to build new public/private alliances were seen as high priority activities now and in the future.

The Board discussed each proposed universe with the following conclusions:

- **Local Government, State Government and Universities:**
  The Board agreed that TURA should consider providing incentives and encouraging partnerships for TUR, while ensuring that any reporting requirements were useful and helpful. Training would be essential as well as efforts to encourage responsibility for chemical use. Increasing awareness of the general public was a key element of success for all these proposed universes. Support for, and coordination with, Clean State was seen as an essential component to success.
  Municipalities - Begin partnerships with schools and highway departments, reach out to Fire and Health Departments as well as LEPC's and voluntary community groups or committees. Use enforcement (perhaps amnesty period) as well as training and education - start up an Information Transfer Center. The effectiveness of some communities in developing and enforcing local bylaws concerning chemical use was noted.

Consideration must be given to constraints of Proposition 2 ½ .

State Agencies - Provide training to identified agency contacts responsible for Clean state implementation, set aside a percentage of agency budgets for P2, set up process for dollars saved through P2 to be credited to the successful agency, and require annual reporting and fees.
Universities- Annual Reporting and participation of research labs and private universities was encouraged. Information transfer among colleges and mentoring was encouraged. Designation of responsible contacts within each university was critical as well as training.

Small Business:
The Board determined that more data was needed to identify which industry sectors would benefit from a lowering of the threshold as part of the future expansion of TURA efforts. Environmental and economic impacts, as well as opportunities for improvement through TUR are the key indicators to determine future TURA involvement. Only after that data was received and reviewed, would detailed consideration be given to the services, resources and incentives appropriate to each new small business sector.

The Board did identify, however, a number of new ideas that should be considered for encouraging the growth of TUR among small businesses. Expanding data gathering efforts beyond TUR to include critical business considerations such as water and energy use, etc was seen as a positive step as long as the data were collected in a way that allowed these small firms to better identify opportunities to increase their efficiency without imposing undue data collection and reporting burdens.

In addition, the Board discussed the value of ongoing DEP efforts to consolidate reporting into one system and the opportunity that it raises to begin to make reporting more useful to both the regulatory agency and the businesses being regulated. For example, if data could be sought and analyzed in a way that made sense from a business perspective, the reporting process and resulting analysis may more effectively encourage businesses to consider environmental issues when making business decisions. The idea of a Multi-Media Report card to assist companies in benchmarking their progress in a number of environmental and economic impact areas and to help state agencies identify and target technical assistance efforts, was discussed. While there was some concern that data included in publicly available report cards may be considered sensitive to some of the business interests, the Report Card could be designed to allow companies to judge how they are doing in terms of environmental and economic performance in comparisons to other similar businesses without jeopardizing confidential business information. These reports could also be used by the state to identify the "Best in Class" companies who could be offered incentives to go beyond compliance standards and to plan for total environmental impact reduction. Incentives discussed include simplified reporting, reduced time or increased flexibility in permitting, lower priority for enforcement, access to loan funds, industry mentoring, marketing incentives such as a seal of approval, fee reductions, grants, tax credits etc.

Hospitals:
The Board encouraged increased work with hospitals in light of the successful MWRA initiative to promote P2 as a strategy to reduce mercury discharges from Boston area hospitals. The Board considered the need to support ongoing hospital efforts to seek alternative non-toxic products, and to challenge major vendors/suppliers to reduce toxics such as mercury and lead in the products they sell.

Next Steps

The TURA program has initiated a sector-by-sector research project that will inform the Advisory Board's discussion on which small business should be considered for future TURA targeting. It is anticipated that the project will be completed within three months, at which time the Board will continue its discussions.

Other on-going efforts are continuing such as the refining of the list of TUR substances by the Science Advisory Board (SAB), the streamlining of paperwork, the continued exploration of fee policies to more effectively reward TUR success and to encourage public/private partnerships, and the resolution of other "quick fix" issues raised by the TUR Planners that relate to current TURA program activities.

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